SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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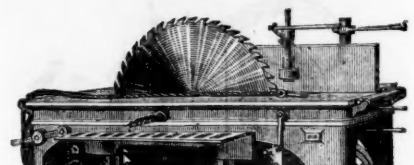

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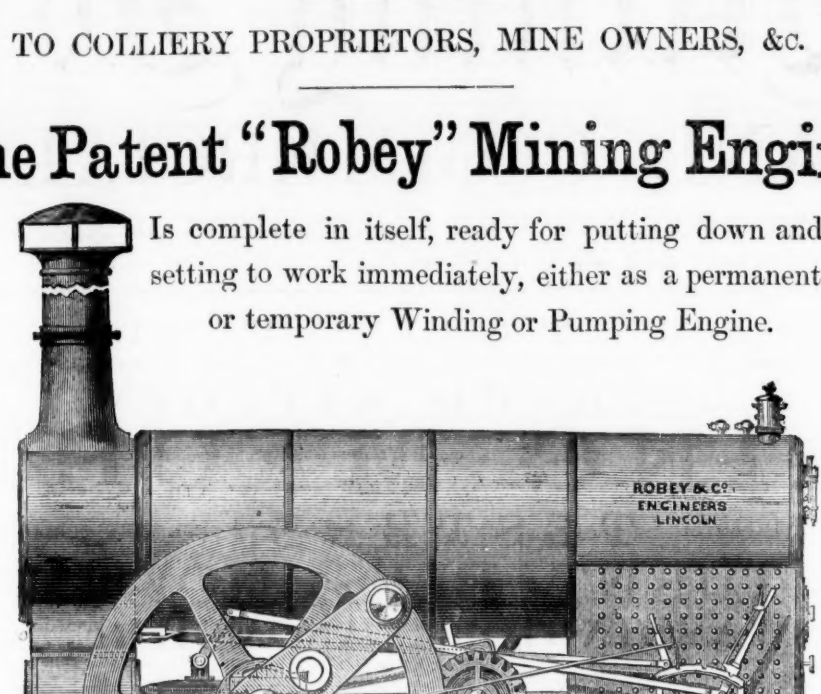

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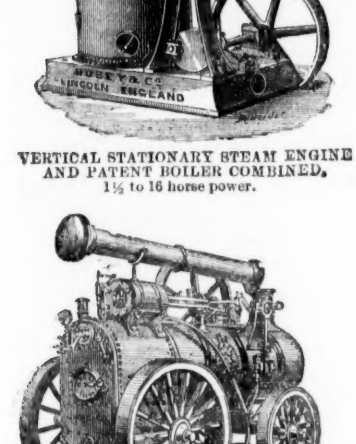

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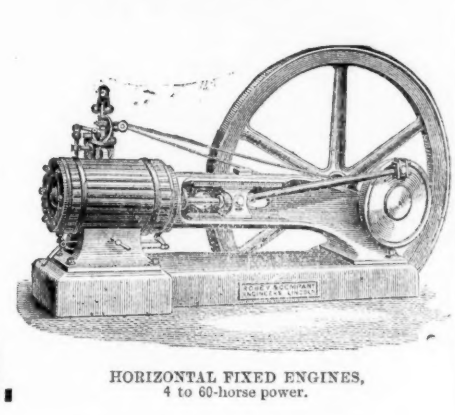

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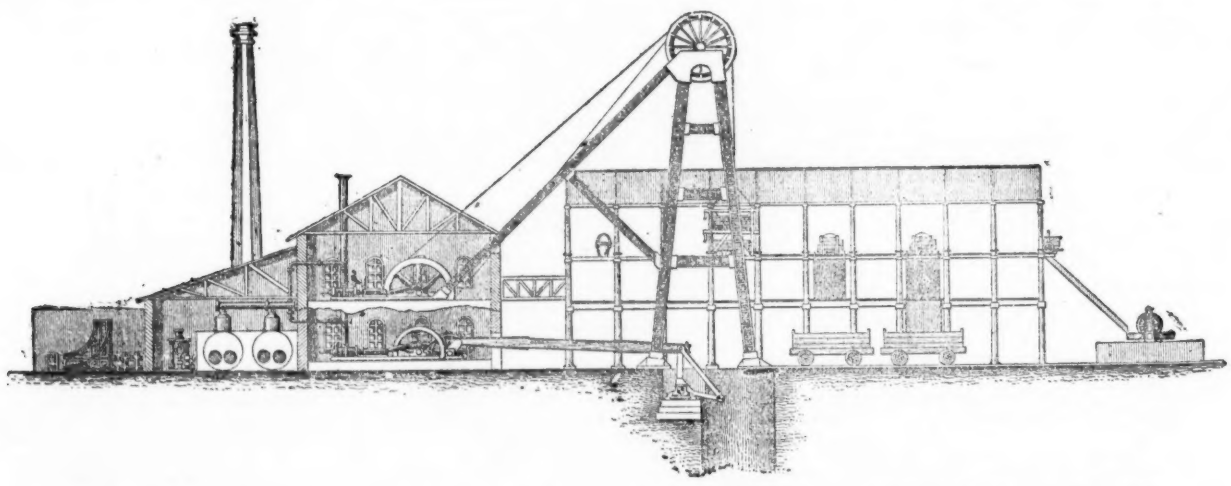

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Original Correspondence.

SUBSIDENCE AT THE SALT MINES IN CHESHIRE.

SIR,—This subject, which has occupied the notice of the Press during the past few weeks, is one of national importance, salt being in point of tonnage the largest—iron excepted—manufactured article in the United Kingdom. Some 24 years ago there was a cry of failure of brine in Cheshire, and from the position I occupy in connection with large salt works, I am presumed to have some knowledge of cause and effect in regard to recent subsidences in the neighbourhood of Northwich. It is well known that what is technically called brine is a natural production formed by subterranean springs of water passing over rock-salt, and when fully saturated is of a specific gravity of 42° per Twaddle's hydrometer; it contains 25 per cent. of salt and 75 per cent. of water; the latter in the process of manufacture is passed off in the form of vapour. About 8,000,000 tons of brine are pumped annually in Cheshire, which, after deducting 75 per cent. of water evaporated, gives about 2,000,000 tons of salt, more than 1,000,000 tons of which is exported to foreign countries. The water is again supplied by Nature in the form of rainfall; but the salt is gone for ever, and this has been going on, more or less, from the time of the Romans.

There can be no doubt that the land in the salt districts of the county of Chester is undermined and honeycombed over an area of considerable extent, and must from time to time produce results similar to those of recent occurrence, which to a great extent are caused by the abstraction of the rock-salt in the form of brine. I say to a great extent, because it is considered that if there were no salt-works subsidence in a minor degree would go on by means of subterranean streams of water, passing over and dissolving the rock-salt of the higher levels, which by some authorities are considered to be carried to the sea.

At Droitwich, in the county of Worcester, and for miles round the town, subsidence has been going on, more or less, from time immemorial. At these works (three miles from Droitwich) there is no indication of subsidence to the present time, owing undoubtedly to several causes—the comparatively recent erection of the works, the great depth of the pits, and the granite-like hardness of a large portion of the strata in sinking. To the present time the four pits on these works are the deepest and most costly in England, and the beds of rock-salt as transparent as crystal.

In regard to Cheshire, I do not, however, for a moment anticipate that the great staple trade of that county is going to collapse for many generations to come, as the quantity of rock-salt still remaining over a very large area of that county is considered to be very extensive, owing, it is presumed, to its being a maritime county. Worcestershire being an inland county, the quantity of rock-salt is known to be limited to a comparatively small area.

Cheshire and Worcestershire are at present the only counties in England where salt is manufactured to any extent. Weak brine springs have been discovered in other counties, similar to the waters of Cheltenham, Leamington, &c., but nothing less than fully saturated brine would pay to work for salt-making in the present severe competition with foreign countries.

At the present time a Bill is being promoted in Parliament to make salt proprietors in the county of Chester liable for damage done to buildings and land by the subsidence in question, the merits of which I could not presume on your space to discuss, further than to observe that, although I cannot but sympathise with persons whose property has been damaged, I feel that legislation on such a subject is beset with grave difficulties, and would involve serious complications—for example, it would hardly be equitable to hold the salt proprietors of the present day responsible for damages the cause of which has been going on, more or less, for upwards of 2000 years, for they are already great sufferers by many of their salt works being submerged or ruined.

JOHN CORBETT, M.P., Droitwich.

Stoke Prior Saltworks, Worcestershire, Dec. 30.

THE SALT CAVES OF PERSIA.

SIR,—From the circumstance that English salt finds its way into every open market in every part of the world the producers of it are naturally anxious to know the particulars of the sources of supply, wherever those sources may be situated; the very interesting account of the salt caves and mines and of the trade in salt in the Persian Gulf, by Assistant-Surgeon Abder Rahem, will, therefore, be generally acceptable. It appears that the area lying on the Persian Gulf between 26° 10' and 27° 10' north, and longitude 53° 50' and 56° 30' east, is an extensive area abounding in a large deposit of salt, which crops out at various places on the surface, rising up into ranges of rocks of no little magnitude. The principal places, says Abder Rahem, from which salt is obtained in the area mentioned are—Kowin, on Kishm Island, Hormuz, Larak, Pohal, near Khamir, "Sir-bu-Nafair," Jabal Bostana, and Hameran on the Persian coast. The general appearance and character of the salt-bearing rocks here being of a reddish colour, from red ochre, varying from earthy consistence to stony hardness, which covers the salt deposit, and is more or less mixed with it, imparting to it a red tint. The ochre is associated to a small extent with specular iron ore. The association of the ochre with salt is so constant in this salt area that the existence of the former is almost a sure indication of the presence of the latter. Indeed, from the general appearance of the rock at Hameran, he suspected it to contain rock-salt long before its discovery by the natives. About sixteen miles from the Bassidore station, in a south-easterly direction, and three miles from the village of Kowin, on the island of Kishm, is a range of rocks bordering the sea, and consisting very largely of rock-salt, covered in some parts by red ochre, while in others large masses of salt of stony hardness and reddish tint are seen to compose the surface and mass of the rock, giving it the appearance of a structure made of red bricks and mortar.

In the western end of the range is situated the salt cave with its briny stream, so admirably described by Mr. W. Johnstone. Besides this, there are several other places in this range where briny water issues forth, and collecting in hollow ground close to or removed from these rocks, deposits beautiful crystalline masses of salt by spontaneous evaporation. It is stated that some 40 years ago the salt was largely procured by this method; numerous shallow pits were excavated, where as the brine evaporated it deposited salt, which was then collected for commercial purposes. But since the people took to quarry the salt the pits were neglected, as the process was tedious, and the salt obtained little in quantity and not good in quality for commercial purposes. However, the streams of brine and some of the pits still exist and yield a portion of salt for home consumption. The working of these salt mines during the past 30 or 40 years has given rise to large caverns in the bowels of the rock. In almost all these caves from the trickling of the brine, stalactites of various shapes and magnitude are formed yielding snow-white masses of salt of saccharoid description.

The salt occurs sometimes as pure white masses, easily reduced to granules, sometimes as red masses of stony hardness, sometimes as saccharoid masses from trickling of brine, and, lastly, as translucent and transparent masses of cubical forms. In some of the translucent specimens pure crystals of sulphur are found adhering to or enclosed in the mass. The granular form is the one of commercial value. It is generally of a pure white colour. One specimen was of a darkish colour from an admixture of specular iron ore, and to a small extent a metallic sulphide (bismuth?). The red hard blocks of salt are principally used by the natives for salting fish. Indeed, the existence of such an extensive deposit of salt in a district where fishery is carried on to such a large extent seems to be a provision of the Almighty for the benefit of his creatures. The salt is dug out by means of crowbars. Sometimes during the working of these mines people are buried alive from earth falls. The mines which yield the present salt are situated about half-an-hour's walk from the sea-shore; the path leading to them winds between the rocks and is difficult for the camels. The salt is brought on the beach by the camels, and there sold. Salt of a very good quality has been for some short time past quarried from the rocks close to the cave described by Mr. W. Johnstone, the distance from the beach being only about 100 yards, so that the cost of carriage is saved to the miners.

The salt mines at Hameran are also extensive. They are situated about an hour's walk from the seashore. The salt occurs in beds of about 4 ft. thick with intervening layers of earthy material. The salt beds are hard in consistence, and are broken by means of gunpowder, the masses being subsequently reduced to granules by wooden and iron mallets. Some of the specimens here are of a pale greenish colour from an earth of that tint. This earth exists in isolated deposits and mounds varying from earthy softness to stony hardness, the green tint seeming to depend upon manganese. The quarrying expenses here are about $1 per "bahar," of about 3600 lbs., or 1 ton 12 cwts., camel hire and boat hire bringing up the price to about $2½ per "bahar." Should the vessels requiring salt go to Hameran, over $½ boat hire would be saved to them. No doubt in the working of these mines improved implements of quarrying, improved roads, and means of carriage would greatly facilitate the work and reduce labour. Large quantities of salt are exported by native boats to Muscat, whence it is carried by merchant vessels to Bengal, Zanzibar, Mauritius, Batavia, &c., and merchant vessels bringing rice, sugar, &c., to the gulf; also on their return take a cargo of salt, generally at Lingah. On an average from 25,000 to 30,000 tons of salt are exported annually from these mines, the best specimens being from the Kishm Island and "Sir-bu-Nufair." The price of salt at Lingah varies from $4 to $5, while at Muscat it is from $5 to $6 per "bahar."

It is also mentioned that there are certain springs in the rocks close to the village of "Salakh," opposite to Henjam, the waters of which are warm and charged with salt, yielding naphtha of a reddish colour. It is highly combustible, burning with thick smoke. The natives use it for purposes of light, and use it locally for rheumatic complaints. The existence of crystals of pure sulphur in the salt noted above, and the existence in certain places of salt springs charged with sulphurous gases, lead one, from analogy, to suspect the existence of sulphur on the island of Kishm, like what is found associated with earthy gypsum on the Persian mainland. That by making known these facts Abder Rahem has done much to promote the commercial prosperity of Persia cannot be doubted, and I believe that as a profitable speculation the salt deposits of the Persian Gulf would yield better results than many enterprises which promise more.

Liverpool, Dec. 29. ABDUL EFFENDI.

THE PHOSPHATE DEPOSITS IN THE WEST INDIES.—No. IV.

SIR,—Last week I left at the east end of Cayman Brae Island, and having examined all I required I sent my servant to catch the pony which had been browsing all day out of the sun under a huge cedar tree. We saddled up, and started back to the bay, taking our course in Indian file, over a fearful road, round the other side of the island to Mr. Stedman's house, where his good wife had prepared for us a most sumptious dinner, composed entirely of the products of the island, wine, fruit, fish, flesh and fowl. It is impossible for me to describe here how I enjoyed this charming evening and dinner, served in the open air, beside a "paupau" tree, and adjoining an orange tree, full and ripe with fruit. It is well known no man appreciates a good dinner more than a miner in all climates. Many times during my meal, as I paused to hear the roar of the sea, the screaming of the noddy and booby-birds, the cackle of the green parrot, and to wipe off from my brow the perspiration and horrid musquitoes, did I think of home, my wife and boys, and the probable deep snow that covered our Cornish moors. At 9 P.M. a bell rang (which had been a man of war's bell), prayers were read by the Governor, and we all retired tired to rest, looking forward on the morrow to a trip in the island boat to see the great koker nut walks at Little Cayman's Island, some two hours' sail distant. 5 A.M. came, and after a good wash, shave, and a brush up, off we started, taking our hamper of provisions for the day with us, and a glorious sail we had to the little cove, where we were met by an old nigger, who had lived on the island with his wife (a native of Hondurus) for over 50 years. This man takes charge of the cocoa nut walk, which is the property of Governor Eden and his family, his house being similar to a Devonshire pig-sty, a hole in the top to let the smoke out, and a small hole for entrance; the musquitoes here are simply awful, and Europeans cannot in the evening walk about without musquito veils. This island is about a mile long, and half-a-mile wide. There is good anchorage in about 6 fms. at the cove or little bay, and a good deal of small mahogany and other woods have been cut and shipped in schooners by the Yankees to America. There are some deposits of phosphate on the island, found in pits between the large coral stones, the formation of the island being entirely carbonate of lime, but I found, upon analysis, that the quality, as in the other island, was too poor to ship. There are an extraordinary number of lime trees here, growing wild everywhere, and producing abundance of fruit. I employed some men to gather, squeeze, and concentrate down, over a slow fire, some hundred gallons of juice, which I shipped in a passing ship to Jamaica, and *via* Royal Mail to England, which was sold by a London broker at the rate of 40*l.* a puncheon. I am convinced, with a little capital, there is a great deal of money to be made by an enterprising man here, who could also devote his attention to the growth of sugar cane and tobacco, at present not grown on the island. R. G. S.

Forest Hill, Dec. 29.

THE HUNGARIAN COPPER COMPANY.

SIR,—In reply to the letter of "Enquirer," asking for information about this concern, I have pleasure in furnishing you with the following facts:—The property is in Hungary, and only four days distant from London. It was owned by Count Karolyi, and other noblemen and gentlemen, and they have laid out on the mines about 60,000*l.* sterling. During this period they have laid open an enormous extent of ore ground (all above the adit level), and the opinions of the best practical men agree that the quantity of ore ground is practically illimitable.

Mr. Evans, of Mona, was sent over to inspect the property on behalf of the English shareholders. This report is too long for insertion in a newspaper, but he says the lode in one place is 45 ft. wide; that the property is large enough for several mines, and that the association of gold with the copper is a feature of the highest importance, seeing that the average yield is equal to the produce of the celebrated St. John del Rel Gold Mines.

Now there are two important features in this statement. The enormous size of the lode, and the remarkable richness of the copper for gold. The sales of ore have always realised splendid prices, owing to the presence of gold in paying quantity; the quality of the copper is higher than any mines in this country, and the ore is in such abundance that the production will be practically regulated by the number of mines breaking it—having regard solely to the proper development of the miners, the safety of the men, and the economical extraction of the ore.

Perhaps no better judge of the value of such a property could be found than Mr. Evans, of Mona Mines, in Anglesea. His experience as one of Her Majesty's Inspectors of Metalliferous Mines, and at Mona, which is a property furnishing large quantities of copper ore, copper precipitate, copper regulus, &c., peculiarly fitted him for the post. He saw the capacity of the property at once, and strongly recommended the erection of smelting furnaces. Mr. Evans's caution is well known. When he brought out Mona as a limited liability company, some months ago, the shares were 5*l.* each fully paid, and he then said that a very few months would establish the value of the property in the estimation of the public. This has since been verified, and those same shares are now 15*l.* to 16*l.* I am a shareholder in Mona, and as soon as I heard that this gentleman had reported favourably of the Hungarian property I became a shareholder in that also.

The producing power of the mines is stated to be immense; the value of the copper is increased owing to its richness for gold (the Government works purchase it in combination, and themselves extract the gold), and as the properties are large enough to admit of sub-division, and of being worked by separate companies, the shareholders in the parent concern may reap a large profit from such re-sales. In addition to Mr. Evans, other well known men have reported on the company's mines, with even more positive statements. The Hungarian Government has sent its own professors to report on them, and in every case have the same views been expressed—indeed one statement values the ores at two millions sterling—all above the adit level. But after all, the best practical evidence of the value of the property is shown by the circumstance that the whole of the capital has been taken without any appeal to the public, and that the shares are dealt in on the Stock Exchange by the leading dealers.

I must apologise for the length of my remarks, but as this year will unquestionably prove the value of Hungarian Copper (and two or three other concerns I might mention), they may prove interesting to others beside "Enquirer." A STOCKBROKER.

London, Jan. 4.

BRAZILIAN MINING.—THE ST. JOHN DEL REY.

SIR,—In the Journal of Oct. 30 a quotation is given from a correspondent, who writes from this district, regarding the condition of the St. John del Rey Mine, and some remarks from another writer were added comparing the St. John del Rey Mine, or its formation, to the Gongo Soco. The blunder was obvious, yet Mr. John Lean pretends to read the remarks as coming from me. I am the correspondent you refer to. I say "pretends," as I can't think that he was so obtuse as not to see where the added remarks began. Mr. Tendron, at the extraordinary meeting, complained, for a respected shareholder, of such correspondence, and said you should get your information from the office when exact information could be had, and in the same breath he tells you, "from a knowledge of the property," the St. John del Rey is a "magnificent mine." Do you want such office information as this when the bad condition of the mine is common talk in the district where it is located, and where it is difficult to keep miners, who think it is dangerous to work in? I state these as facts, and Mr. Tendron knows that the information is not anonymous. I say that the managers of the St. John del Rey use unfair, contemptible means to try and keep capital from engaging in mining here. They know that the miners will go elsewhere if they can get work. Mr. Tendron said such correspondence tended to depreciate the value of the property. Of course he meant shares, which are inflated to a large premium. He read a letter which came into his possession (would he like to say how he became possessed of it?), which referred to selling shares when the public (the holders) should become aware of the real condition of the mine. I know of people who bought shares at high prices for a rise, supposing that they knew all about the mine, naturally they are sore, as they have had no chance to unload. May I ask what is the difference between operating for a rise or a fall, and why you are asked to call at the office for exact information when you can hear all about the magnificent mine at the various meetings? Why was not the public given exact information last spring when it was known that the vein was giving out, and the employers here who had shares were selling out at 280 and 240? Confiding shareholders wait for information; they do not seek it.

Now may I speak of a probability. It is probable that when the new hoisting works are completed the product of the mineral will be largely increased from reserves. How long they will last probably can be learned at the office when exact information is given. Then as the work progresses the usual mining probability or possibility of an increased value, of that all will hear quick enough. I wish to add, here at Ouro Preto, at Raposos, Marroum, and Congonhas, the course of the Morro Velho Company in openly doing any and every thing in their power to keep any company from operating is well known and talked about. The company are very unpopular with all. Mr. Morrison boasts of driving men out of the country, and Mr. Tendron joined him in it last July and August. Mr. Pearce, one of their best miners, came to me asking for a job last week, saying that he had a family and he did not like to risk his life in the mine. I tell you all these facts have been kept quiet. I feel annoyed at such a letter as that of Mr. John Lean's, who figures much in your Journal.

Raposos, Brazil, Dec. 7. VERDAD.

ANGLO-AMERICAN MINING.

SIR,—In the market report comment regarding the Emma Mine, which appeared in the Journal of Dec. 4, it is stated—"It has already been maintained in this column, and the view is supported by American legal decisions, that under the existing law (allusion is made to the Federal Code, which supersedes all state laws and customs), it is beyound doubt that a United States patent only includes the minerals within the lines drawn from the boundary lines on surface and the centre of the earth." Will you allow me to say that this statement, so far as it relates to the side lines of a lode claim, although correct in some cases is not usually so. As the subject of mineral rights in the United States of America is one of general interest, and a subject of special interest to persons who are concerned in the Emma Silver Mining Company, the Silver Peak Mining Company, and the Republican Mountain Silver Mines, but one which is somewhat difficult and not generally understood, I desire to lay before your readers what is held by the best authorities to be the law as regards mineral claims in the United States.

Previous to the issuing of a United States patent, the freehold in a mineral claim remains vested in the United States, and the owner of the claim holds what is termed the possessary right. This possessary right is by the mining law of the United States expressly limited to, and can be held only by, citizens of the United States, persons who have declared their intention of becoming citizens, and corporations organised under and by virtue of the law of any state or territory in the United States. A lode claim is by the United States law limited in length to 1500 ft. along the vein or lode; the width of the surface ground cannot be more than 300 ft. on each side of the middle of the vein at the surface, and cannot be limited to less than 25 ft. on each side of the middle of the vein at the surface. Within the limits respectively of 25 ft. and 300 ft., the width of the surface ground is governed by territorial state, and district mining regulations. In Colorado the usual width is 150 ft on each side of the middle of the vein at the surface, therefore the usual size of the surface ground of a lode claim in Colorado is 1500 ft. in length, by 300 ft. in width.

By the United States mining law the ownership of a lode claim includes the ownership of all lodes or veins the top or apex of which lie within the boundary lines of the claim extended vertically downward. This ownership is limited along the strike or longitudinal direction of the lode or vein to where the lode or vein crosses and passes beyond either the side lines or the end lines extended vertically downward, the ownership of the lode or vein terminates at the point of crossing of either the side lines or the end lines. The ownership in the downward direction or dip of the lode or vein is unlimited, except as hereinafter stated, and the owner of the top or apex of the lode or vein can follow the lode or vein in its downward course to any distance or any depth, irrespective of the ownership of the adjacent surface ground.

The exception to the rule is this:—If A descovers a lode by means of a shaft or a tunnel, and makes a location which does not include the top or apex of the lode, he is limited to his side lines extended vertically downward. If B subsequently discovers and locates the top or apex of the same lode, he can not claim that portion of the lode previously located by A: the ownership of the lode after it passes in its downward course or dip the side line of location made by A is a question which I believe has not been decided.

The owner of a tunnel site location has the right to locate on the surface any blind lode not appearing on the surface which he may discover, whose top or apex lies in unclaimed land belonging to the United States. He has not the right to any blind lode which he may discover whose top or apex lies within the surface boundary lines of any lode claim extended vertically downward. It follows, therefore, that if the surface ground is all located the owner of a tunnel site location cannot acquire title to any blind lode he may discover. It may fairly be concluded that, after the issuing of a United States patent the question of title to a mining property is comparatively simple; previous to that time the purchase of a mineral claim requires great care, judgment, and knowledge of the history of the claim from the time of its discovery; soundness of title cannot be established by an official abstract of title.

I submit to the readers of the *Mining Journal* that the idea, to carry out which the Rica Silver Mining Company of Colorado was organised—namely, English ownership and an American charter—is a valuable one, and that such an arrangement is the best, in fact I may say the only safe feasible mode of bringing English capital into d-

rect communication with the prospector and locator, who is usually a poor man, unable to develop the mine he has discovered, and must sell his claim to some one with capital. I submit also that the way for an English investor to obtain the largest possible return for his money, is to avail himself of the present opportunity, and purchase working capital shares in the Rio Silver Mining Company. I believe that persons who at this time purchase shares in the company, will realise dividends of from 50 to 100 per cent. per annum. The Denver and Rio Grande Railroad will be open next summer to the San Juan Mining region, and men with money will overrun that country. My impression is that the current price of mining property in the San Juan region, and especially at Rica, will advance during the summer of 1881 to double, treble and quadruple the present cash valuation of mineral claims. J. J. WEST.

Chicago, Dec. 20.

SILVER PEAK MINING COMPANY.

SIR,—The attention of the directors of the Silver Peak Mining Company (Limited) has been called to the letter of Mr. J. J. West on Anglo-American Mining in last Saturday's *Mining Journal*. The directors are aware that no alien can acquire legal title to mining property in Colorado until patented, but equitable and beneficial estates can be acquired and are held by a great number of alien companies and individuals in American mining property through the medium of a citizen of the United States, as trustee, and this course will be adopted until such time as patents can be obtained. The titles are being investigated on behalf of the company by our New York correspondents, Messrs. Lord, Day, and Lord, in whom we have the fullest confidence.

The mines in which Mr. West is interested, if of high elevation and worked by shafts from the surface, are doubtless seriously affected by snowfall; but the property owned by this company is intended to be worked by means of a tunnel, which has been already driven over 1000 ft. Consequently no fall of snow can seriously interfere with or affect the working of the Silver Peak throughout the whole year. WILD, BROWNE, AND WILD,

Ironmonger-lane, Jan. 6. Solicitors for the Company.

CEDAR CREEK GOLD MINES AND WATER COMPANY.

SIR,—I am very glad to hear that there is now a proposal under consideration for re-constructing this company and resume working upon the extensive mineral property in America. The Cedar Creek Company has been lying dormant for some two years, and like the Emma, Last Chance, and the Chicago (now the Flavilla), there is every probability of the mine being further explored, for American mining is again becoming popular with English capitalists. The Cedar Creek shareholders have this advantage, and which is not within the reach of every American mining company known on the London Stock Exchange, that they have the chance of again working a really valuable property, on which a very large sum of money has been expended in opening up the ground, and which it is believed requires only a few thousand pounds more expenditure on it to bring the company into a dividend-paying condition. See what the Frontino and Bolivia directors have done with their mine. They have for some years been opening up their property, though some people laughed at them and said they were only throwing away good money to search for what they would never find. Now the Frontino and Bolivia Company is in a most flourishing condition, and the shares, which fell to a nominal price some years ago, are now at 5*l.* 7s. 6d.

My opinion is the Cedar Creek Mines may be made another such a success as Frontino and Bolivia, and I do hope when the arrangements for a re-construction are completed that the shareholders will rally round the directors and re-work the property.

Jan. 4. A SHAREHOLDER.

THE COPPER MINES AT THE CAPE.

SIR,—When at Cape Town in August last I heard a good deal of local gossip about these mines, and from all I can gather I am inclined to think that your correspondents are not far wrong in classing them as quite unique of their kind. To give you an instance, I was told that at many points the excavators were raising some 10 tons of 30 per cent. ore per fathom, worth in England some 200*l.*, which, though not a mining engineer myself, seems to me something very large.

Evidently the Government at the Cape attach great importance to developing the large mining districts of Namaqualand, for I heard they are laying out considerable sums in constructing a harbour at Port Nolloth, and as there is nothing else but copper to export from the district, and the small imports are only for the supply of the miners' wants, this outlay can only be to give the company working the mines increased shipping accommodation for the ores that come down by railway (the company's own, I believe).

I have been some years in Chili in a mercantile capacity, where large fortunes have been made in copper mining, but I have always understood that in the most favoured district 65*l.* hardly covers cost of production and shipment to Europe, taking the mines then all round, but at the Cape I learned that cheap labour enabled the adventurers there to produce copper for about 35*l.*, rather a startling fact for the Valparaiso merchants I should say, and for such countries where the cost of production is greater still. H. G.

London, Jan. 4.

LEAD MINING IN FRANCE—SENTEIN.

SIR,—The year 1880 has closed in rather a dull and dismal manner for this and nearly every European nation with the exception of France. Since becoming a Republic that country has enjoyed an uninterrupted career of prosperity. Her commerce has increased, her manufacturers are flourishing, her great mineral wealth has been further developed, her taxation has been reduced, but, nevertheless, her revenue has increased. The latest returns of the Minister of Finance show that the exports of France during the year 1880 have exceeded those of its predecessors by no less a sum than three millions and a half stirling. Perhaps never before have the finances of France been in so satisfactory a condition, notwithstanding the great blow the French power received, owing to the late Franco-German war, which some believe was brought about chiefly through the error of the late Emperor, although it is more probable that his Minister of War was deserving of the blame, which caused the invasion of France and the forcible extraction of two of its most fertile provinces by the victorious invader. Before the outbreak of this great war, about the year 1869, mining was on the increase, and had been carried on very extensively in France, and gave employment to many thousands of miners, but the moment war was declared they were compelled to relinquish their work and join the army. The Sentein Mine was then considered to be one of the richest on the Continent for the production of silver-lead, and had just reached the zenith of its prosperity when operations were suspended. About 450 men were employed in and about the mine and smelting-works, and they were sending 300 tons of rich lead monthly to market, and so productive did the lode prove for lead that the blende was entirely discarded, which latter is now a source of large additional revenue to the present company. The outcrop of the masterly and stupendous lode on which the mine has been worked can be traced almost in continuous regularity for miles. It was opened about 24 years ago, and was worked during a period of 17 years. The length of the ground opened is about 235 fms. The vertical depth of the deepest part of the workings does not exceed 50 fms., but on the incline of the lode more than 100 fms. Embracing the whole of the length and depth of the workings, or of the ground laid open, comparatively little of the latter has been excavated, and, as it is, the whole of the ground or the principal part thereof still remains untouched, to be excavated or worked away and to every appearance is of the same quality and character as that which has already been excavated, dressed, and sold. The width of the lode varies from 6 ft. to 8, 10, and in places over 20 ft. long stretches of it are rich in solid galena. In one place where the vein is opened on it has been valued at 60 tons of lead and blende per fathom for the length (16 ft.) and width (10 ft.) The sales of silver-lead and blende made by the Sentein Company in this country within the last six months have, I believe, realised between 8000*l.* and 9000*l.*, to say nothing of the large quantities of lead, carbonate of lead, and blende now in transit. I roughly estimate the quantity of ore brought to the dressing-floors by the wire-rope during the same period at from 5000 to 6000 tons. In the balance-sheet for last year credit was taken for ore sold, 4806*l.*; ore in transit, 1001*l.*; stock of ore on dressing-floors and broken at mine, 7195*l.*, which enabled the company to declare a dividend of 10 per cent., after paying off all the preliminary expenses, and carrying over a large balance to the next account. Let me compare these results with those of only the last six months, and ask if the shareholders do not naturally expect to receive the welcome news next month (January, 1881) that a very large dividend has been announced; and, in conclusion, I would strongly advise them to hold on to their shares, which must eventually become of great value. BELFORT, ROACH, AND CO.

Boulogne-sur-Mer, Dec. 31.

THE GREAT COPPER DEPOSITS OF THE WORLD.

SIR,—At long intervals the announcement of some great discovery of ore throws the metal markets of the world into a state of excitement bordering too often on something like semi, if not actual, panic. To the fortunate owners of such property the excitement of the markets is of little or no moment, as he is conscious that whatever the price metals may ultimately attain, his property must be to him a mine of wealth, owing to the wants of this busy and hard-working world of business, which without its minerals would languish and die, so that even the lowest market price, however disasterous to the owner of ordinary ores, has little or no effect upon him. Calm and serene he can look on, knowing the certainty of an ample competency. Such deposits have the rich discoveries of copper in Chili, Parys Mountain in Wales, Devon Great Consols, and others in Cornwall, proved to many. In the modern history of mining, however, the recent discovery of carbonate of copper at Las Caldas Mine, near Santander, bids fair to outrival in richness at any rate all the previous discoveries. Specimens of the ore (not picked) are now in the London office of the company, dug up a short time since by the then owner and now present manager of the company, yielding on assay made by Messrs. Johnson, Matthey, and Co., 47 per cent. of copper, worth at the present low price of copper, above 22*l.* per ton of ore. That 6 tons of this ore was raised by three men in three days proves beyond question that the ore exists in quantities sufficient to yield very handsome profits, and the opinion of the eminent mining engineers—amongst them the Spanish Government engineer—who visited the property is that an immense deposit of rich ore will be found making against a very masterly cross-course intersecting the property; indeed, the last report received announces the discovery of new lodes and veins of equal richness, all making towards the main body of the ore, and any day the announcement may be made of the important fact that this main body of ore has been struck.

It now only remains for me to offer my congratulations to the shareholders of the Las Caldas Copper Mine, who will, no doubt, have cause of rejoicing during the present year. ESPANA.

MACNAB'S SYSTEM OF SHOT FIRING IN MINES WITH WATER CARTRIDGES.

SIR,—In last week's *Mining Journal* there appears the report of a paper read at Manchester on Macnab's system of "Shot Firing in Mines with Water Cartridges." In that report Mr. Macnab is incidentelly referred to as the "inventor of the hydraulic cartridge, &c." This, so far as it goes, is true enough; but seeing that Mr. Macnab is the inventor and patentee (in 1876) of the system and principle in its entirety, to which the hydraulic cartridge is a very necessary but simple accessary, this report does him but scant justice.

The Times letter referred to in the report misled Mr. Tonge and others, and it is scarcely a matter for surprise that a system which has taken Mr. Macnab many years of patient but earnest labour to bring to perfection should have been so imperfectly tested by Mr. Tonge with the insufficient means at his command and with his crude appliances, discarded by Mr. Macnab years ago. It is also stated in the report referred to that the Macnab cartridge is made of zinc. This statement is wrong and misleading. The Macnab patent safety cartridge is made of specially prepared paper instead of the zinc originally used. The importance of the invention cannot be overstated, as will be seen by a reference to your advertising columns.

R. W. JENKINS,
Pro the Macnab Patent Safety Cartridge Company (Limited).

Queen Victoria-street, Jan. 3.

THE DYNAMITE MONOPOLY.

SIR,—Mr. Darlington in his letter, published in last week's *Mining Journal*, must have made a mistake in stating that "the dynamite lately imported Opladen is stronger and far superior to the dynamite of English manufacture," and that "the smell after blasting is nothing so strong and offensive as that evolved from Nobel's dynamite." The strength of dynamite is caused by the quantity of nitroglycerine contained therein, and it is this material alone which causes the offensive smell often complained of; it, therefore, necessarily follows, the conditions of detonation and explosion being the same, that the stronger the material the greater the smell, and the weaker the less smell. Presuming that there is fairly perfect combustion, and that the holes are not greatly overcharged, it cannot possibly happen that there is a less smell from the stronger than from the weaker compound.

It cannot be too often impressed upon the managers of, and workers in, mines that holes are constantly overcharged when dynamite is used, the result being an imperfect explosion of the whole mass, consequent wastefulness, and a disagreeable and offensive odour. The Dyna Magna Company, who also have a letter in last week's Journal, appears to be falling into errors in endeavouring to convey an impression that their material will be stronger than dynamite in stating that it absorbs 10 per cent. more nitroglycerine than this latter compound; and they quote from official letters and certificates received from the Home Office in 1879, &c., one of which states that they will be licensed to make nitromagnite of not more than 75 parts by weight of thoroughly purified nitroglycerine, uniformly mixed with or absorbed by 25 parts by weight of well worked magnesia alba; but according to the licence under which dynamite is made I find that that material also contains 75 parts by weight of thoroughly purified nitroglycerine, uniformly mixed with 25 parts by weight of infusorial earth, known as Kieselguhr; it would appear, therefore, that if both parties comply with the terms of their licences there would be little or no difference in the strength of the two materials. It is, perhaps, scarcely worth while troubling your readers on these unimportant questions, but there appears to be at the present moment a habit on the part of some of your correspondents of making random and incorrect statements. VERAX.

London, Jan. 6.

THE SWAN ELECTRIC LIGHT.

SIR,—Mr. Swan delivered a lecture at Liverpool last month on the electric lighting of coal mines, and his light is about to be introduced for a pit bottom in one of the Pemberton pits near Wigan; probably other collieries will speedily adopt it. It is thought probable that it may at no distant period be utilised for all parts of a mine. The electric lamp exhibited at Liverpool was not much larger or heavier than an ordinary Clanny lamp. It was moved about whilst burning amongst the audience within the length of the wire and examined with interest. The glass globe containing the incandescent carbon in vacuo is covered by a strong glass cap to protect it from fracture. It is in contemplation to construct a self-contained lamp on this principle, a battery being included within it. Whether the cost will permit of its general use in coal mines is not yet known.

Three Swan lights are now in use lighting the library at Alnwick Castle; each contains three of the Swan carbon lights within a globe of ground glass, and the illumination of the apartment is brilliant. The light being steady and soft, and its purity renders it especially adapted to lighting picture galleries, libraries, or other large apartments. In the music-room three similar lamps have been fixed; in the ante-room there is one lamp enclosing three carbon lights, making twenty-one lights in all. The large drawing-room will also shortly be illuminated by the same means. The electric current to the lamps is at present temporary, and is supplied by a Fowler traction-engine, working a Gramme generator. The peculiar advantage of this light for such apartments is that there is no vitiation of the air, and no injury to pictures or furniture ensues, as is the case with gas. S. L.

COKE OVENS.

SIR,—One method of preventing the great waste with Beehive ovens is that mentioned last week as Bull's patent, the object of which is to utilise the whole of the products. The usual size of this oven is 12 ft. by 8 ft., cost of each 75*l.*, duration of the process of coking 24 hours; the yield of coke is large, with some coal amounting to 73 per cent. From the construction of the oven it is stated that the coal is thoroughly burnt, both at the bottom and top. The power generated from one oven by the burning of the gases will raise steam to equal 14 horse. This gas can be conveyed and utilised for boilers, blast furnaces, puddling furnaces, &c., and thus economise ordinary fuel expenses to a great extent. The tar and ammoniacal liquor extracted are worth about 4s. 6d. from a ton of coal carbonised; this will in some instances pay both the cost of coal and labour. As regards quality the coke is said to be superior to that made in the ordinary oven; in the absence of any comparative trials no definite conclusion can be arrived at, but the question of quality of coke is the most important point of all, and on which the success or otherwise of the system mainly depends. I shall endeavour at a future time to give more specific information on this subject. M. E.

SYNOPSIS OF COPPER ORES SOLD IN CORNWALL DURING 1880.

SIR,—In making my usual retrospect and annual summary of the total quantity of ores sold from the mines of Devon and Cornwall during the past year, I find it presents an improvement on the preceding one, with a less diminution on the aggregate returns and for several previous years.

The total quantity of copper ores sold from the mines in the two counties during the year 1879 was 42,534 tons, at an average produce of 7 per cent. for fine copper; standard, 88*l.* 14s.; price per ton of ores, 3*l.* 7s. 6d.; fine copper, 2903 tons 3 cwts.; total amount realised on sale of ores 137,122*l.* 17s. Whereas the year 1880 gives a total amount of ores sold 41,693 tons; average produce, 7 per cent.; standard, 98*l.* 1s.; price per ton of ores, 3*l.* 16s. 6d.; fine copper, 2753 tons 18 cwts., realising 152,836*l.* 10s.: showing that with a reduction in quantity of 841 tons of ores of equal produce, as compared with the preceding year, the advance of 9*l.* 7s. on the standard and 9s. per ton on the ores gives a surplus of 15,713*l.* 18s. on the annual return, which is a favourable omen for some additional impetus to copper mines. Thus, with the continued reduction of Chilian charters, it may be inferred that the total returns from our copper mines for the New Year will be in advance of the past.

I subjoin a list of 15 mines, showing their returns, with the increase and decrease of each mine during the past two years,—

Mines.	1879.	1880.	Increase.	Decrease.
Bedford United	678	663	—	15
Devon Consols	9228	9717	489	—
East Caradon	78	38	—	40
East Pool	2549	1289	—	1260
Gawton United	545	131	—	414
Glasgow Caradon	2176	1800	—	376
Gunnislake	1915	1971	56	—
Marke Valley	3232	2599	—	633
Mellanear	5892	6208	316	—
Phœnix United	528	134	—	391
South Caradon	5800	5881	81	—
South Devon United	*nil*	1140	1140	—
West Seton	1339	486	—	853
West Tolgus	3028	2993	—	35
Wheal Crebor	1175	2870	1695	—

Mining and Assaying Offices, Liskeard, Jan. 1. M. W. BAWDEN.

EAST HERODSFOOT, LISKEARD.

SIR,—My attention has been called to the report of this mine in the Journal of Dec. 25, wherein the lode is stated "to contain a leader 6 in. wide of rich silver-lead ore, and 2½ ft. wide of the other parts of the lode dispersed throughout with the same metal." On enquiry into the facts it is found that this adventure was opened at the adit level at about the same time that the Herodsfoot Mine adjoining was being opened, and both by the same adventurers. A good quantity of rich ore (said to 700*l.* worth) was sold from the adit, all of which was produced north of the cross-course, which intersected the lode at about 30 fms. from the mouth of the adit. The prospects were such that a steam-engine was erected, and a shaft sunk 30 fms. below the adit, from which shaft it was intended to follow the lode in depth. The shaft, however, was sunk west of the adit and lode, but as the lode was underlying east the perpendicular shaft was constantly increasing the distance between the shaft and lode, and nothing was done upon it below the adit. The adit also, which was driven through the cross-course, and 40 fms. south of it, failed to intersect the lode after passing the cross-course, and no search was made for it east or west until the shareholders and manager came to the determination to stop one of the mines. At this stage a cross-cut was driven west, in hope of finding the lode; but not finding it in that direction the miners drove east of the adit level, at the extreme point of the drivage south, and only 6 ft. from the level intersected the lode, which contained good silver-lead ore. The miners immediately informed the captain of their discovery, but the meeting had determined to stop the mine previously to the discovery, and, notwithstanding the wish os some large shareholders to continue it, the resolution was carried out, and the machinery and plant were disposed of, and nothing further done. It had been stated that the lode was cut in the engine-shaft at the 20, but this was only a branch, so that the lode has still to be seen at a deeper point than the adit; but the information gleaned from the working miners, and corroborated in most important points by mining agents, who recollect the circumstances, fully justify the expectation of meeting with equal success in the East Herodsfoot Mine as has been realised in the Herodsfoot. There are few mines mines with such advantages for economical working, and with the same strata, the same cross-courses, and with such a lode as is seen north of the hill referred to by the agent, the shareholders may reasonably expect very large dividends.

ONE WHO FAVOURS LEGIMATE MINING.

MINING IN THE ST. BLAZEY DISTRICT.

SIR,—As this matter is and has been for some time under discussion, I would thank you to permit me to say a few words on the subject, as it was in this very locality that I began my mining some 50 years ago, and as I happen to know every foot of ground in the locality; and as my thoughts have often returned to the district, and to the mining problems of the locality for some 50 years, I go with Capt P. Rich in much that he says, infers, and suggests. But touching the non-desirability of re-working the abandoned mines of the district, I widely differ from his especially expressed views in the *Mining Journal* of Dec. 25, as I am persuaded that most of them, if not the whole, without exception, should be re-worked, as truly deserving commercially valuable enterprises. St. Blazey Consols—Wheal Union, Wheal Maudlin, Scobbles, Par Green, and the north-western parts of "Mount"—most certainly, in my opinion, deserve to be resumed, re-forked, and re-worked. The substitution of "Mount" for "Par Consols" and some other variations, will not for a moment mislead those who know the district, and who will be likely to take interest in the subject.

What has misled most of the mining men hitherto respecting the St. Blazey and Par range of ground is the unrecognised character of some considerable pans of highly fractured strata, and which must be specially deemed uncongenial, when and where occurring, amid the killas of the county. The late Captain John Hitchins seriously stumbled at this occurrence; and later on Capt. Puckey, Capt. Trevenen, Capt. Barrett, and others. At Wheal Union the rock was so fractured that in the former sinkings if the engine happened to miss a couple of strokes the sumpmen had to leave the bottom. But by-and-bye, near and you may say at the present bottom, they struck

a most congenial run of killas strata, and the upper water being taken up, the sinkers, or sumpmen, who last wrought there scarcely had water enough in the lost sink to bore with; but below this I have no doubt that the mine would become highly productive, and that it would well repay the Messrs. West to remove the foundry appliances a little and resume the workings. As the lode wrought in this uncongenial and upper fractured ground has produced a considerable quantity of copper pyrites—mundic—and towards the bottom minute sprinklings of fine crystals of tin; and as where such occurs in adverse strata there need be no doubt of its great prolificness amid the congenial underlying permanent strata. With your permission I will refer to the highly favourable junction not far below the present bottom south; and further dwell on the other portions of the locality in my next and subsequent communications. A MINER.

Jan. 1.

TIN MINING IN ST. BLAZEY.

SIR,—In continuation of my remarks anent the New Eliza Mine I would say the big lode is as good as it has been. The miners in costeaning have cut a great many other lodes, varying in size from 1 to 4 ft. in width, showing a good character, and producing tin; and, independent of the champion lode in the south, it is a very valuable sett. The natural advantages for working and erecting the plant, and for making dressing-floors, cannot be surpassed in the county, and all the refuse from the dressing department will be washed away to sea. The men working in the mine would like it to be theirs, when they would try to get a stamps from the mine material dealers by giving a six or nine months' bill; and they say that before it became payable enough tin would be returned to defray the cost of the stamps. and get a good start for themselves.

I have no doubt, and see no reason why, the daughter of New Eliza may not be as prolific for mineral as the rich mother, Wheal Eliza. I want to see a movement on pure legitimate principles.

St. Blazey, Cornwall, Jan. 4. P. RICH.

BORING MACHINERY.

SIR,—In reply to "Gold not Gilt," I recommend him to spend four or five days in inspecting the different air-compressors, engines, &c., on and about Carn Brea Hill. His experience would save him much trouble afterwards. Were I to enter into explanations, and say that a plant has been laid down capable of driving 10 machines, but until certain pipes are laid, and shafts put in such a state as is necessary to success before operations are commenced, and that we are only working one machine, what use would facts or figures be? If he would visit the mines he would have no difficulty in getting at the respective cost of all things necessary according to plant or machines required.—*Dec.* 29. H. W.

SILVER-LEAD MINING NEAR BRISTOL.

SIR,—As I know you are at all times pleased to give publicity to any matter which relates to mining I would ask you to find space for a few remarks on the above subject. Metalliferous mining is utterly unknown in this locality, and consequently I was surprised to find from an article published in the City papers here on Dec. 28 that a plucky citizen had discovered a group of lodes running through the property of Sir P. J. W. Miles, Bart.; and that having obtained powers to work the same some time since he had been employed in laying open the property.

From a visit I have since paid to it for my own satisfaction I find there are four main lodes—two east and west, and two caunters—upon the backs of which the old miners in ages long gone by have extensively operated. The present proprietors have done a lot of useful work in clearing up some of these pits, and in laying open the lodes throughout the grant; and I was very pleased to find that these lodes, taken as a whole, are of such rare promise as I have seldom seen. They are embedded in the well-known lead-producing carboniferous or mountain limestone, and are composed of rich-looking gossan, carbonate of lime, quartz, and flookan, with ore running throughout. I also saw some beautiful quality ore—the produce of these operations—of which many stones weighed from 30 to 40 lbs. each, and good enough for the market. The situation embraces every advantage for cheap working, and as it is intimated that a strong local company is about to be formed for its development I cannot refrain from saying that I wish them every success, especially as this would prove such a boon to the community at large, and be the means of starting many other undertakings of a like nature in other parts of the district.—*Bristol, Jan.* 4. YOUNG BRISTOL.

SOUTH FRANCES AND WHEAL GRENVILLE.

SIR,—My reply to Capt. James last week to which you kindly gave space will no doubt have enlightened "H. C. S." on the true position of South Frances; and as to his defying me to disprove that it "continues rich," I beg to say I have carefully examined the last report of the agents, and find there are 13 bargains reported worth on an average about 10*l.* per fathom, several of which cost more to drive than the tin is worth, the best point being worth 20*l.* per fathom, not 25*l.*, as reported by Capt. James on Dec. 25, who in his after dinner speech at the last meeting said he had seen it worth 300*l.* per fathom. The problem, then, is a simple one. If it could pay a dividend by neglecting the reserve fund with a lode worth 300*l.* per fathom, what can it do now it has such a heavy outlay to make, with a lode worth 10*l.* per fathom on the average, or 20*l.* per fathom in the best point? I saw the lode myself worth 100*l.* per fathom after it was reported to have fallen off considerably. Surely, then, with such an enormous decline in the value as these figures indicate, and which are taken from the report referred to by "H. C. S.," and from that of the ex-manager, the mine cannot be said to continue rich, accurately speaking, especially with the enormous difficulties and great depth of the mine they have to contend with, as explained in my last. To cut down Pascoe's shaft and put the machinery right will take at least 12 or 18 months. It depends on how many places they can work at it at a time, and during that time the returns of tin would be totally cut off. This seems rather a bitter pill, especially for those who have bought in at a high price after the caution given them by Messrs. Watson Brothers 14 months ago; but my honest opinion, after a very careful and minute consideration of the matter, is that it is the only remedy for it, and unless this is carried out quickly there will soon be a crash. If the water once gets in it will be then a far more difficult matter to cut down this shaft, and take four times as long. The extension of the 185 east and west must cut down considerable quantities of water. Going east they are draining West Basset, where there is powerful pumping machinery, and approaching Wheal Basset old mine, which is nearly full of water, besides passing under Marriot's shaft, where the bulk of the water is flowing to this (Marriot's) engine. Then going west they are draining West Frances, where there is also powerful pumping machinery, and it must be borne in mind that all these mines are connected by the same lode, and the more one thinks of it the more serious does it look, South Frances, of course, being the deepest, and in the face of this the agents have been complaining for a long time that they have great difficulty in keeping the water at Pascoe's, and at the same time pressing on as fast as possible this level with boring machinery, which is to give the *coup de grace* to the wreck. This is somewhat startling, but it is nevertheless true, and I defy all the brokers and engineers on earth to prove the contrary. The pitwork has been described in the Journal repeatedly, and it is a well-known fact that there is no remedy for it but to cut down Pascoe's shaft and erect a new 90-in. pumping-engine capable of keeping all the water.

As to what cost-book mine has a reserve fund of 30,000*l.*—one that has just spent that amount to put its machinery right, is as well off as the mine that has it, and requires to spend it to get its machinery right. South Frances is a singular case at the present time, no mine in the district requiring such a heavy outlay to save it from ruin. Then as to the vaunted 2186*l.* which is represented as a reserve fund. There was a month's cost admitted to be in arrear at the last meeting, and I understand there are also two engines unpaid for, and how much merchant's bills we were not told. I sincerely hope it is not amongst the number that leave their merchants' bills unpaid for nine months, and give a three months' bill. I have, however, very strong reasons to believe there are heavy liabilities not made known to the public. As to being more noble, &c., to leave these glaring facts unexposed to the public and to cloak them, I leave that honour to "H. C. S." and those who in turn blow the same trumpet. I cannot accept it. We do not consider, as "H. C. S." intimates, it is a misfortune to have become connected with Wheal Grenville, the share having advanced over 100 per cent. since then. The lode is about to be cut at the 190 on the same junction where they had a rich bunch of tin in South Frances, and the first dividend is about to be paid.

Stanley-street West, North Shields. W. NANCE.

WEST CHIVERTON MINE.

SIR,—I am sorry to find that "Observer" in his letter contained in your issue of Dec. 25 condescends to use such unworthy means as misquotation of his own letter to support his case. If "Observer" believed it, as stated in his firet letter, that does not necessarily make it a fact, as affirmed in his last, and it will be further noticed that on this issue he wishes those interested to form their opinion. I will say now more on the unfairness of this line of conduct. Knowing he has a bad case, I am disposed to deal gently with him.

"Observer" claims to be in a better position than the writer for giving reliable information on the points at issue between us, which I certainly cannot yield to him, for in addition to the evidence adduced in my first letter, and the fact that "Observer" has not refuted a single part of that communication, I will now state, though not at any time an agent of the mine, I have many times personally inspected every point referred to in my letters, and have also seen the junction of lodes in the eastern part of the mine, and in closing my remarks on this part of the property I give "Observer" and the shareholders generally my word as a man of honour that my statements are perfectly correct.

Relative to the 70 cross-cut, I may say that the south lode was cut in this cross-cut before Capt. Southey took the management, and, according to the most reliable opinions in the neighbourhood, there is no other lode known between this point and the south boundary. The adit cross-cut south has been driven through this piece of ground, and is many fathoms beyond the 70. I have been in it many times but never saw nor heard of any lode south of that referred to. For nearly two years past, during which time Capt. Southey has been extending this point, he has been leading the shareholders to expect a discovery, but this lode is evidently like the mirage. At present I hear it is being driven by four men; surely such an important point ought to be forced on by a full pare?

If "Observer" replies to this communication he should at least do so fairly. Having by your assistance, Sir, discharged a public duty in laying the truth plainly before the investors in Cornish mining, I am satisfied, though I shall continue to watch the fine old mine, being— ONE DEEPLY INTERESTED.

EAST LONG RAKE MINE—HALKYN MOUNTAIN.

SIR,—I am glad to find that this district is again beginning to attract the attention of capitalists. I have known Halkyn Mountain for many years: it has yielded more lead, perhaps, than any other piece of ground in Great Britain of a similar size (if not in the world), and still there are as rich fish in the sea as have ever been caught—thousands of acres of land on this mountain have only yet been scratched by mining operations. This remark is especially applicable to East Long Rake Mine. I say without fear of contradiction that it will turn out as good a mine as any of its neighbours have been, and when I make this statement I remember the palmy days of Pant-y-Go and Old Hendre, with their monthly sales of many hundreds of tons. I find the East Long Rake directors have adopted the safe course of having a larger capital than they will ever require for the working of the mine. I should say that 5000*l.* would be more than sufficient to establish it on the Dividend List. With your permission I purpose continuing my notes on this district when I make my next tour of inspection—early in the coming year. CYMRO.

Dec. 29.

THE ROMAN MINE, TALIESIN.

SIR,—The other day I was passing this mine with a friend, who asked me if I had not heard of the grand discovery of copper at the Llalni-hir Mine, and wished me to have a look at it; having an hour to spare we went up to the mouth of the shaft. The drawing-machine was busy at work, and I never in all my experience saw such splendid copper coming to surface. I have not the slightest hesitation in saying that the lode is worth from 3 to 4 tons of copper per fathom. My friend wanted very much to go underground to see the lode, but the agent refused to let us unless he had a note from the proprietors (who I believe are Aberystwith people), but he showed us over the dressing-floors; and I should say, judging from the large pile of ore stuff being crushed and dressed, that the owners have a grand property. I have had some little experience in copper mining both at home and abroad, but I have very rarely seen finer copper ore. From what I am informed the district is wonderfully improving.—*Machynlleth, Jan.* 5. H. E. R.

THE TALIESIN MINING DISTRICT.

SIR,—A fortnight ago I noticed an account in the *Mining Journal* from your North Wales, Salop, and Cardigan Correspondent. Now, Sir, between the Bryn-Dyfy and Tanyrallt Mines—about which he so often writes—there is one called Llani-hir, a part of the old Roman sett, now producing the finest copper of any mine in Wales, which will realize, when sold, a high figure; in fact, it was sold some time ago at over 24*l.* per ton. The mine is only 20 fms. from the surface, and if your correspondent were only to see the large piles of rich copper ore waiting to be crushed he would certainly be surprised. We are now crushing and dressing, and shall soon have a nice parcel of ore in the market. I am an old subscriber to your paper, and shall feel obliged if you will kindly mention this matter to your Correspondent. I think he ought to notice this mine. We do not want any puffing; simply the truth. I am afraid some evil-disposed persons have spoken against it and endeavoured to prejudice him; but I trust the next time he comes this way he will kindly call and judge for himself. JAMES MCILQUHAM.

MINING IN THE BUCKFASTLEIGH DISTRICT.

SIR,—The prospects of mining in this neighbourhood are very encouraging. Since the Brookwood and Wheal Emma Mines have been amalgamated and worked under the South Devon United Company the underground developments, especially eastward, have proved to be most satisfactory. In some parts the lodes have been worth from 20*l.* to 50*l.* per fathom, and I am creditably informed that those courses of copper ore are traversing the whole length of the adjoining East Devon Consols, where they have opened on the back of one of the main lodes, from which large rocks of ore have been raised and sent to surface. It is confidently anticipated as soon as the engine-shaft is sunk and the lode cut in the 30 large and rich courses of ore will be laid open. A SUBSCRIBER.

THE LLANRWST MINE.

SIR,—I should feel deeply obliged if you and some of your London correspondents would thrash out the subject of this mine for the benefit of us poor country bumpkins. I have been rubbing my eyes till they are almost sore and yet cannot see it. Llanrwst told us very loudly some months ago that it was going to reform itself. I suspected it at the time, and now it presents itself with a brazen and bad imitation of Tankerville. Its liquidator offers us, *pro rata* as I read it, 30,000 new shares at 2*l.* for our 30,000 old shares at the same value each. Only whereas three-fourths of this supposed 2*l.* value is taken as paid, we are expected to subscribe, *pro rata* I suppose, the other fourth, or 10*s.* per share.

What is this but the old idea in a new shape—that the present proprietors of Llanrwat should be required to find more money to carry on the mine on its old lines, and for aught we know under its old management. The subscribers have already refused this money when asked plainly for it. Do you think it likely they will consent to be tickled out of it? Capt. Knapp states in his letter to the liquidator the damning fact that in three years Endean's shaft has been sunk only 7½ fms. Llanrwst has been very richly tricked out at the surface—everything no doubt first rate for show, but the real work has been neglected—*teste* Robert Knapp. The only working dust Llanrwst has made it has thrown into the eyes of its subscribers. It was all very well not to pick out its eyes, but they might as well have opened its eyelids. This they seem to me to have avoided doing. The boasted reserves are—where? Not unveiled. Pray give light at least to—— A COUNTRY BUMPKIN.

Jan. 4.

LADY BERTHA MINE.

SIR,—On a recent visit to the mine I found the agent was underground, and I then strolled around, and was pleased to see at work the very powerful water-wheel which the directors have recently erected. It is a 45-ft. wheel, and is large enough, in my opinion, to sink the mine to any depth, and all the other machinery seem to be in accordance. The men were actively engaged dropping the pumps, and I found that the water was out at the 15, and they expected to be at the 20 this week.

The agent in the meanwhile had come up from underground, and he showed me some stones of ore that he had broken from the 10 the day before, and said he was then putting men there to break ore. He went over the mine with me, and pointed out the benefit the company were likely to derive from the large additional ground that had been added to the sett, being the entire old East Bertha Mine. He also showed me that another wheel was being erected for the purpose of hauling and crushing, and thus getting rid of one of the difficulties the old company had to contend with, as they had only one small wheel for the whole of the purposes, and this with the inadequate pitwork gave them no end of trouble. SHAREHOLDER.

[For remainder of Original Correspondence see this day's Journal.]

CORNISH MINING ENTERPRISE IN 1880.

[*Concluded from last week's Journal.*]

Though Devon Great Consols has often entered the Dividend List with the very handsome results noted below, the position of the copper standard has had a very serious effect upon even such a mine as South Caradon, which for the first time in its history had in last September to report a loss of 900*l.*, while continuing as rich and productive as ever. However, here also we must hope for better times.

There is little to report in connection with lead mining, except the fact that the low prices of that metal disappointing expectation, while they have prevented any dividends being paid by either of the few remaining western lead mines have not prevented the starting—in some cases under very encouraging auspices—of several new companies.

Much the same may be said of our iron mines, which now also show a fair indication of activity.

China clay has likewise been quiet. Here we have had over production, and had above all things a very substantial revival of our general trade.

If "the true value of a thing" be, as Hudibras lays down with more wit than strict economical accuracy, "as much money as it will bring," the true test of the prosperity of mining will be the dividends declared. And though in strictness we can look neither to dividends nor to market prices of shares as infallible tests of the value of any individual concerns, still in the aggregate they may be fairly accepted as sufficiently accurate indications of the current prospects and progress of mining industry as a whole. And, without pretending to the absolute accuracy of every figure, it is most encouraging to be able to report that the Dividend List of the year is the best we have had, all things considered, since the depression set in. The year 1879 gave us the very shortest list of dividend mines on record, though there was an improvement in the amounts paid. 1880 has a longer list of dividend mines than we have known since 1874, a total divided profit which we may roundly put at double that of the best year of the past decade. Who in the face of results like these can say that the tide has not at length fairly turned? Taking the past five years we find that while 1876 divided in round numbers 41,000*l.*; 1877, 49,500*l.*; 1878, 37,000*l.*; and 1879, 57,000*l.*—the past year has paid 118,768*l.*, while its total profits, when we take into consideration the improved financial position of many mines, both dividend paying and non-dividend, can hardly be put at less than 150,000*l.* For example, and by way of special illustration, we may cite the case of Carn Brea, which the last meeting showed to be realising very handsome profits, that but for the balance, now almost worked off, would have allowed the declaration of a very handsome dividend. So of Tincroft and several other concerns. The dividend list, so far as can be prepared at present was:—

Mines.	Shares.	Per share.	Amount.
Blue Hills	3,939	£ 0 2 0	£ 393
Devon Great Consols	10,240	1 12 0	16,984
Dolcoath	4,296	5 10 0	23,628
East Pool	6,400	4 5 0	27,000
Gunnislake (Clitters)	10,240	0 1 0	1,024
Mellanear	10,000	0 9 0	4,500
Penhalls	5,000	0 2 0	500
Phœnix United	12,000	0 2 6	1,500
South Caradon	512	4 10 0	2,308
South Condurrow	6,123	1 0 0	6,123
South Frances	4,500	1 6 0	5,890
West Basset	600	0 5 0	150
Wheal Crebor	12,000	0 7 9	4,650
Wheal Eliza	1,024	15 0 0	15,360
Wheal Peevor	3,000	5 0 0	15,000
Wheal Kitty	4,295	0 17 6	3,758
Total			£118,768

In estimating the calls of 1879 we put their aggregate total at somewhere about 55,000*l.*, and we deduced therefrom the gratifying conclusion that with a dividend total of 37,000*l.* mining in the West had paid its way, and something more. But for one circumstance we should be able to say that our mining of 1880 had paid its way, and a great deal more. When, however, we say that we believe more money has been laid out on western mining than has been returned, we must explain that this is wholly due to the most gratifying indication we have of restored confidence in mining enterprise—the large number of new mines that have been set to work during the twelvemonths, including under that head abandoned mines resumed, which of course have necessitated the outlay of large sums of additional capital. There are somewhere about 50 mines more at work, or on the eve of commencing operations, now in December than there were in January—tin, copper, lead, and iron. They are to be found in every mining district in the two counties, Devon as well as Cornwall, having quite its fair share. Now, it is impossible to get all the money actually invested in these new concerns. We all know that nominal capital is frequently one thing, and actual capital another; and there are reasons which induce us in several instances to put down the amounts purporting to be called up at very much lower figures than appear; and, therefore, though nominally we have a very much higher total, we are inclined to put the calls on behalf of both classes of mines, old and new, at somewhere between 200,000*l.* and 220,000*l.*, of which the calls proper as distinct from the capital of new ventures may be reckoned at about a third. Approximately we believe this fairly represents the position.

Amongst the new ventures, or old friends under newer auspices, to which 1880 has introduced us we may reckon Basset and Grylls, Belowda, Carn Camborne, Devon Great United, Devonshire, East Botallack, East Devon Consol, East Herodsfoot, East Wheal Buller, Fortescue, Great Consols, Indian Queens, Lady Bertha, Mount Carbis, New Kitty, New Penrose, New West Caradon, North Herodsfoot, Pendarves United, South Devon United, St. Just United, West Phœnix, Wheal Boys, Wheal Hony and Trelawny, Wheal Friendship, Wheal Prussia, Wheal Shepherds, Redmoor, Pednandrea, North Treskerby, Perran Silver-Lead, South Penstruthal, &c. Against this we have only to set the erasion of some half dozen concerns, and not one of any active or material note. There are several more that could be dispensed with, and that will hardly, however mining

proper may prosper, enter materially into our calculations of returns for the review of 1881.

Meanwhile the list of calling mines has been much the same in 1880 as in 1879, but for various reasons the total, as noted above, is heavier. Among the more important concerns in this category we may name—Bedford United, Combmartin, Cook's Kitchen, East Caradon, East Chiverton, East Crebor, East Lovell, Killifreth, Levant, Marke Valley, East Penstruthal, South Tolcarne, South Wheal Crofty, West Kitty, West Peevor, New Peevor, Wheal Grenville, Wheal Uny, and a few of these have now reached a point at which they may be regarded as out of the calling list.

The tendency to divide the interest, and thus lighten the responsibilities which the increased cost of mining operations has rendered inevitable in our cost-book mines (and which has been carried in some cases to such an absurd length under the Limited Liability Act), has operated in a few instances—notably at Wheal Owles, which has converted its 80 shares into 2000; while the 200 shares of Botallack have become 800; and the 1000 of Wheal Sisters has been multiplied by six. Within reasonable limits it is unquestionably wise to take steps for the distribution of share capital over a substantial basis, so that in case of need the burden shall not of necessity be individually great.

As some indication of the practical effects of the year upon mining property we repeat the list given in our last report of 40 dividend and progressive mines, showing the selling prices respectively at the end of 1878, 1879, and 1880. Some of the figures are rather approximate, and generally the average highest, and not the absolute highest, of the various quotations has been taken, while there is no such jump as 1879 afforded (which more than doubled the value of mining property), it will be seen that there has yet been both a very substantial and a very general advance in the value of mines, which would be even more apparent if we brought some other concerns into the calculation, and if, too, we indicated the several points of the 12 months. As it stands, however, the table is amply sufficient for its purpose.

	1878.	1879.	1880.
Carn Brea	£ 35,000	£ 62,500	£ 110,000
Cook's Kitchen	4,000	8,575	26,950
Dolcoath	128,800	240,575	244,872
Devon Great Consols	17,920	66,560	164,040
Bedford United	3,000	9,000	11,583
Botallack	—	16,000	13,600
East Pool	60,800	147,200	230,400
East Caradon	2,500	18,500	12,288
East Chiverton	5,000	12,000	4,000
East Lovell	900	2,200	10,480
Glasgow Caradon	37,500	33,000	45,000
Gunnislake	18,000	19,760	40,960
Gawton	1,500	1,000	11,500
Great Wheal Eleanor	12,000	2,250	—
Killifreth	7,500	3,750	1,000
Marke Valley	6,750	15,000	18,000
Mellanear	45,000	45,000	50,000
Penhalls	7,500	10,000	10,000
Phœnix United	—	60,000	30,000
South Caradon	30,720	40,108	33,280
South Condurrow	70,415	82,460	67,353
South Crofty	3,800	12,250	22,000
South Frances	33,750	49,500	51,000
Tincroft	54,000	102,000	126,000
West Basset	18,000	75,000	93,000
West Frances	7,500	24,575	22,528
West Chiverton	4,500	6,000	4,500
West Tolgus	20,480	12,825	25,600
West Seton	5,400	30,000	22,000
West Peevor	2,250	18,500	50,000
Wheal Agar	25,500	39,000	37,500
Wheal Peevor	19,500	66,000	84,000
Wheal Jane	1,300	10,240	10,000
Wheal Kitty	6,400	11,750	19,428
Wheal Owles	—	8,800	16,000
Wheal Crebor	3,000	45,000	60,000
Wheal Grenville	13,000	26,000	66,000
Wheal Sisters	9,000	17,500	12,000
Wheal Russell	6,400	12,410	—
Wheal Uny	2,045	5,140	18,432
Totals	£730,300	£1,667,848	£2,005,294

There has been no improvement effected in regard to the much abused system of tin smelting sale, nor is there at the present any chance of a change for the better in this direction. True there have been certain changes, and promises of amendment, but they have produced no practical results worth naming. Great things were predicted of the establishment of the Penpoll Smelting Company, and still greater of the introduction of selling tin by ticketing, in apparent utter oblivion of the fact that the ticketing system had never been regarded as wholly satisfactory as applied to copper, and that there was no very clear reason why it should be more successfully applied to tin. From the very outset we predicted the failure of this new device, and a very short experience of its inutility has caused it to be relegated to the things that were. Those who were loudest in favour of tin ticketing six months ago have nothing to say for it now, and it is buried past all hope of revival. We adhere to our opinion, expressed again and again, that no change in the smelting system as at present conducted will be of the slightest utility in our mines until they—the large ones at all events—undertake to smelt their own produce, and send it into the market as tin metal, white instead of black. Of that reform there appears at present not the slightest prospect, though it only requires that one mine of position should lead the way.

It is but fair, however, to add here that the evils under which the tin mines of the county have suffered during the past year in connection with the fluctuations of the standard for their produce are due to causes with which the smelters of the county have had nothing to do. They, as well as the miners, have been the victims of the market operations which during the past twelve months have made dealing in tin at times little better than downright gambling. The "bears" and the "bulls" have been struggling almost continuously with varying fortune, and we, here in Cornwall, have been helpless. Fortunately we have had a revival in trade, and a continuously increased demand, with a practically stationary supply; and these are conditions that must in the end get the better of any merely speculative operations. The pinch has been at times very keenly felt, and various remedies have been proposed, one of the boldest being that of Capt. A. James—the formation of a syndicate to acquire all the tin in stock, and thus to give the market stability; but even if this scheme could have been carried out its effect would only have been temporary, and it was in its essence economically vicious, as interfering with the natural course of trade.

Nothing whatever has been done for the reform of the inequalities of the dues system; but, on the contrary, there have been several illustrations of its injustice as at present worked. The day will come when dues will be levied upon profits, and profits only, for which we have always contended as the only equitable mode; but at present the only approach made towards this is the announcement of Mr. Basset in declaring his intention to take for the future 1-20th from Dolcoath, and that he will not do so unless the adventurers receive four times as much as himself. We express no opinion as to the proportion, but only point out that here we have the recognition—imperfect though it may be—of a relation between dues and profits, which may possibly prove the thin end of the wedge. Of course, while adventurers are willing to take setts under the present system there will be no difficulty in getting lords to grant them.

The year 1880 has been more fruitful in points of practical progress than 1879. The latter year saw a very steady, though not rapid, advance in the introduction of boring machinery, but in this respect it was far behind its successor. For the first time since machine boring was talked of in connection with Cornish mining the boring machine may be said to be in general use, though even yet there are mines of importance so far behind the times as to trust to hand labour only, and in Devon machine boring has hardly effected even a footing. Still the progress of the past twelve months has been so rapid that a very large development in this direction for the coming year is inevitable, and we are apparently not far distant from the time when boring machinery will form a part of the plant of every properly furnished mine that has advanced beyond earliest infancy. We are apparently as far, however, as we were before from any adequate information upon the special values of the rival tools, though there are indications of a practical weeding out of some of the competitors. Perhaps this is the way, instead of any mere formal conclusion, in which this end will be effected. Attention has been turned of late to the need of providing a more economical form of motive power, and we are likely ere long to see important improvements effected in air compressors. During the year there has already been an advance in the matter of machine carriages—one of the most important accessory details of mechanical boring. The original failing of the boring apparatus first introduced into the county was that it was not strong enough to stand the wear and tear; but this has now been obviated.

In connection with the actual working and development of our mines we have also to note the important propositions laid before the Mining Institute recently by Capt. Josiah Thomas, to drive levels at wider distances apart than has been customary, and the valuable series of experiments carried out under the direction of the Joint Explosives Committee of the Royal Polytechnic Society, Miners' Association, and Mining Institute. It is much to be regretted that means were not afforded to carry these investigations further, but they were thoroughly practical, and so far as they went of very high value. The fruit is already being seen. There are several directions in which similar joint action may be taken with very great advantage.

The year, indeed, seems to have done something substantial in the way of producing a better *esprit de corps* among mining men, for there certainly is a far better chance of hearty marked action, which we may attribute in no small degree to the influence of the Mining Institute. This "One and All" feeling has been plainly manifested within the past few days in the hearty efforts made to strike a blow at the injurious dynamite monopoly, and oppose the attempts of the Dynamite Company to obtain a renewal of their patent. If everybody connected with dynamite has not made his fortune it has not been for want of knowing how to charge, and there is certainly no reason why they should have another chance. It would be altogether contrary to all good ideas of public policy to allow such a patent to be renewed, and we have very little doubt that the opposition will be successful, coming as it is now doing—though the West has taken the lead—from every part of the kingdom.

In connection with dressing operations, the most important event of 1880 has been the introduction of a new pulveriser at Wheal Peevor, the invention of Messrs. F. W. Michell and Tregonning, to which the silver medals of the Polytechnic and Miners' Associations have been awarded. This is at once the simplest and the most effective means of dealing with the "burnt leavings" of our tin mines that has been introduced, and the principle, moreover, is one which seems capable of extension in many directions.

We have before time pointed out that the one great gain of the depression which we have had to endure has been the enormous improvement and economy of mining operations, so that a much smaller price for produce will pay now than it did, for example, 10 or even five years since. We believe that even within the past 12 months gain of a substantial character has been made in this direction. It has been questioned whether with tin at 50*l*. Cornish mines can pay. Some at least have proved that they can be remunerative at a very much lower figure, and beyond that, we are perfectly sure there are other mines which can produce better results at the 50*l*. figure in December than they could in January. We are very far from perfection even yet, but now that we know the worst of foreign competition there is every reason in these facts to take courage.

There is little to note in connection with the operations of the local scientific societies except that they have been doing steady good work. The Polytechnic had an excellent meeting under the presideucy of Canon Rogers; the Miners Association, under that of Mr. R. Taylor; and the Mining Institute, under that of Capt. Josiah Thomas. The Miners Association has received a grant of 100*l*. for three years from the City of London Guild for Technical Education, and in its classes as usual has done excellent work. The annual excursion was to Wheal Eliza. The meetings of the Royal Cornwall Geological Society and of the Royal Institution of Cornwall have been held respectively under the presidency of Mr. A. P. Vivian, M.P., and the Bishop of Truro.

The obituary of the year includes some prominent names, chiefly that of Mr. John Michael Williams, of Caerhayes Castle, the wealthiest Cornishman of his generation, whose property, independent of his very large landed estates, was sworn at 1,600,000*l*., and who, notwithstanding his enormous wealth, remained a plain man of business to the last. Other well-known names are those of Mr. Berron, for so many years connected with the Carvedras Smelting Works; Capt. Richards, and Mr. E. H. Rodd, so long familiar in mining circles in connection with South Wheal Crofty, and one of the most prominent and active public men of the Far West.

Much to the regret of everyone connected with mining in the West of England, among the losses of the year must be reckoned—though happily not by death but by removal—that of Dr. Foster, who in the discharge of his duties as Metalliferous Mine Inspector had won the esteem, confidence, and respect of all with whom he came into contact. On his removal to North Wales he was succeeded in the West by Mr. Frecheville, a gentleman who, like his predecessor, has known how to perform the difficult and at times unpleasant duties attached to his office with tact and firmness.

Among other matters of personal concern we should note the presentation to Mr. Boyns, of St. Just, in recognition of his manifold services to mining, of a very handsome testimonial. That mining is now not only alive but flourishing, or on the eve of flourishing, in that district is largely due to Mr. Boyns. Mr. J. H. Collins, F.G.S., has carried forward his valuable investigations into the character of Cornish rocks and minerals—especially by the aid of the microscope into the chief varieties of tinstones—an instalment of which has appeared in the Journal of the Mineralogical Society, which is under his able editorship. To aid him in his investigations he has had the honour of being selected for a grant from the Committee of Council, on the recommendation of the Royal Society.

One of the most notable events of the year in connection with any individual mines was the proposal to amalgamate West Basset and South Frances, which led to the resignation of Capt. Abraham James as manager of the latter mine, but which it was eventually resolved was not in the interest of that concern. It is very doubtful, however, whether in thus deciding the committee to whom the matter was entrusted looked far enough ahead.

With one exception there have been no casualties of an exceptional character or unusual fatality, but there have been several accidents involving loss of life. The one to which we specially refer was the sad calamity at East Crebor, where three men were drowned in July by the flooding of the mine through the sudden rise of the River Tavy from a thunderstorm. A miner was also killed at Dolcoath in a singular way by the explosion of pent-up air. These, of course, were occurrences which no amount of human foresight could prevent or guard against. To deal with the ordinary class of mining casualties, which have always a great deal of the preventible about them, a valuable code of special rules has been drawn up. This was almost the last official work of Dr. Foster, who consulted thereon with the mine managers and agents generally throughout the two counties.

In other respects the legislation of the year has not been of a very satisfactory character. We have yet to learn to what extent the Employers' Liability Bill will affect local mining enterprise, but there is very good reason to complain of the operation of the Factory and Workshop Act. Mr. Redgrave, the chief Inspector under the Act, visited Cornwall, and had a conference with a large number of mining representatives, which resulted, thanks to the action of the Members of Parliament for the various Cornish constituencies, in some modification of the law. The great grievance, however, still remains untouched—the absurdity of placing our stream-works and dressing-floors under the category of factories, instead of classing the operations there conducted, as they should be, with agricultural labour. This is the point to which future efforts will have to be directed, for it cannot be denied that as matters are a great injustice done alike to mining enterprise and to the children and young persons and the families to whom they belong. That which is right for agricultural operations is equally right for the surface operations of mines, and what is wrong for the one is equally wrong for the other. Legislation we want, but we do not want over-legislation—legislation of the grandmotherly kind, legislation that in its anxiety to lay down a hard and fast line takes no heed of special conditions and necessities.

The general election of the spring was, of course, responsible for its share of dulness here as elsewhere. From our point of view its results locally must be regarded as satisfactory, for Western mining and allied interests are certainly more directly represented in the present Parliament than they were in the last. However, in all matters affecting mining the members for the county and borough constituencies, under the leadership of Sir John St. Aubyn, irrespective of political or other differences, have long been accustomed to make common cause, so that, except in the matter of individual experience, the gain after all is more apparent than real.

REPORT FROM CORNWALL.

Jan. 6.—The New Year is decidedly opening well. Directly the effect of the quietude of business, inevitably consequent on the holiday interregnum, began to pass away we had an advance in the tin standards—the earnest we hope of ten or a dozen of the like amount within no very distant period. Possibly something will depend upon the state of public affairs in Parliament, yet we can hardly anticipate that there will be any untoward influence from that direction. Parliament is not likely to be occupied with matters which will seriously affect the course of general trade, however serious the subjects under consideration may be, and no amount of obstruction that is likely to be raised within the walls of St. Stephen's will have any particular influence on the laws of metallic supply and demand. The revenue returns show a steady and a considerable improvement in trade, and that is really at the present juncture what we have chiefly to look to. If foreign affairs on the Continent again get complicated to the verge of probable warfare then the current political issues will undoubtedly be reflected on the metal market, but at present there is nothing in the exterior situation, either on the Continent or elsewhere, which we may anticipate will make itself felt in that quarter. On the whole, therefore, we think the chances are now in favour of a rise all round, and specially of a substantial and permanent rise in tin. We do not think it probable that in this latter particular 1881 will repeat 1880. Better that it should not, of course, for violent fluctuations, however they may encourage speculation, do not benefit legitimate trade, and it would have been far better last year if prices had not risen so fast and so high to sink again so rapidly and so low. We take it, however, that the tin market is not open just at present to the same amount of manipulation that was possible twelve months since.

It was Lord Macaulay who said that if England were to be destroyed by an earthquake the survivors would manage to meet somewhere among the ruins on the following day, and have a dinner in celebration of the event. There were no such dinners in the West to celebrate the decadence of mining, though things were certainly not very lively when the Mining Institute came to the fore; but there has been a dinner this week at Tavistock of a very gratifying character to commemorate the revival of mining in general and in that district in particular. Devon has great reason to be thankful indeed, and especially the dwellers and those interested in that locality, that in its chief and now only important mining centre, thanks largely to the individual efforts of a few energetic and thoroughly able men, matters are once again looking so bright. It is ten or a dozen years at least since there were prospects before the Tavistock district, using that term in its widest sense, nearly approaching the promise of the present.

We should have referred last week, but for the pressure upon our space consequent upon the review of the year, to the dinner and its attendant gathering of the Mining Institute held quite at the other end of our mineral area—at Penzance. The proceedings were of a nature to sustain the character of that body for practical usefulness; and in the appointment as President of Capt. R. H. Williams, of the famous Eliza Mine, near St. Austell, there is every guarantee that during the coming year its career will be amply worthy of the reputation it has already won. We quite agree with the remark of its new head that the Institute is bringing about a unity of mining men which ought to have existed 25 years ago.

Of the most important topics discussed at Penzance we may mention two—the effect of recent legislation upon the conduct of mining, specially in relation to the Employers' Liability Act, and the dynamite monopoly. The position of affairs, so far as regards the former matter, was admirably put before the Institute by Sir John St. Aubyn, who knows better than any man the difficulty of obtaining modified legislation in accordance with our special claims and needs, and who, with his brother local representatives, having made the best terms possible during the last session, advises a careful watching of the operation of the Act until its expiry, so as to be able to put in reasonable objections and amendments when the time comes for its renewal. We must bear in mind, too, that however imperfect in many respects the operation of the existing "doctor and club" system may be, in it we have already in existence that germ of a system of compensation analogous in some respects to the purview of the Act, and that in this respect Cornwall has been rather in advance. There is no doubt, as the President said, that the Act will cut two ways—that it will tend to bring about improvement where improvement is possible; and that under it it will be difficult to prove undue carelessness. However, the whole subject requires further discussion than it could then receive, and this we are glad to see it is to have.

The dynamite question really seems to us hardly to call for any further discussion except before the Court. It was so far back as 1867 that Mr. Nobel invented this application of nitro-glycerine, which had been known long before; and there certainly has been sufficient time since then to allow of full adequate remunerative profit. The public are not concerned with the nature of any private bargains with patentees. The time must come when all patents, on the ground of public policy, have to lapse, and it will be for the dynamite company to show, if they can, that they are entitled to be made an exception to the general rule, by having an extension under conditions which certainly do not seem to us to give them the smallest claim.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Jan. 5.—At a meeting of the representatives of the colliery owners and workers of North Wales, held in Wrexham last week, it was announced that the great majority of the men were in favour of accepting the principle of insurance, inasmuch as this method secured them adequate compensation in case of all accidents, whereas the Employers' Liability Act only secured them against accidents originating in the carelessness or negligence of owners or their agents. A mixed committee of employers and men was appointed to manage the details of the business. Let us hope that the sensible course thus adopted by the North Wales colliers will be followed by the men in other colliery districts. An eviction case has been pending for some time between the Brynkmallt Colliery Company and a number of men who had left their employ, but who still occupy the company's houses. The case has been settled by the company refraining from pressing the law against the men, on the ground that the latter cannot obtain other dwelling-houses. Meanwhile the coal trade continues good, and some of the larger collieries are curtailing their inland sales on account of the large shipping orders received. This leaves more scope, with improved price, for the smaller collieries.

Every one in this district will rejoice with the Dyliffe Mining Company in their new discoveries and improved prospects. We should also be glad to see the effective machinery at the South Cambrian in full work dressing the large reserves of ore. Of the 50 mines or so in Cardiganshire about 20, or one-fifth, are now in a paying condition; not a bad proportion considering the low price of lead, and we are in hopes that the proportion will be increased. There may be good lead mines near the town of Carmarthen, but the probability

of this being so can hardly be increased by the occurrence of two good mines so widely apart as Llanfyrnack, in Pembrokeshire, and Nant-y-Mwyn, on the borders of Brecon, as referred to by a correspondent in last week's Journal. It is always better to ground the success of mines on their inherent merit than upon chances so remote.

The rise in the price of slates of 5 per cent. takes effect from last Saturday, and it is likely it will be maintained.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Jan. 6.—Alike on 'Change this afternoon in Birmingham and yesterday in Wolverhampton, business was very generally postponed until next week, when the quarterly meetings come off. Pigs were firm. Caponfields iron (Messrs. Bradley Bros.) was quoted strong at 2*l.* per ton for common and 2*l.* 15s. for mine, with a little admixture of cinder. This firm will re-light their second furnace on Monday next. What course the marked bar houses will take next week is unknown. Some traders assert that there will be a 10s. drop, bringing bars down to 7*l.*, and others that there will be a 10s. rise, making bars 8*l.* Sheets to-day of unexceptionable quality were quoted 7*l.* 10s. for singles, 8*l.* 15s. for doubles, and 10*l.* for lattens. The house coal masters assert that prices are 2s. less than last year.

Up to Wednesday night there existed a partial strike amongst the South Staffordshire ironmakers. The men were attempting a fruitless resistance to the drop of 3d. per ton in puddlers' wages and 2½ per cent. in millmen's wages, which follows upon the declaration of Messrs. B. Smith and Son, of Wolverhampton, the accountants to the Wages Board, of the net average selling price of bars in the months of September, October, and November last. The price was 6*l.* 15s. 6d., which is 4s. 2d. per ton below the average obtained in the preceding three months. Consequently the price for puddling falls to 7s. 3d. per ton. The men have held meetings at Wolverhampton, Brierley Hill, and Bilston, at which the leaders have tried to persuade them to accept the drop peaceably. Some of the men went back to the forges on Tuesday night and others again on Wednesday night. But mass meetings are to be held on Saturday, and the question will then be "Shall we retire from the Arbitration Board?"—for many of the men are disposed to do this—or "Shall we give notice for a reconsideration of the wages scale by the Arbitrator?" It is believed that the latter course will receive the most adherents, and it is sincerely to be hopod that it may.

On Tuesday night a large meetings of the miners of Coseley and the surrounding districts was held for the consideration of the Employers' Liability Act. The meeting thought it very desirable to contract themselves out of the Act, provided they could secure 8s. per week for men and 4s. for boys in case of accident; and 5s. per week for widows (of men killed) during widowhood, and 2s. 6d. per week for each child under 13 years; the fund to be made up of 3d. per week contributions from the men, the masters to cover such funds with 25 per cent. of the receipts. It was resolved to carry out this arrangement if possible, and to start a Permanent Relief Fund on the basis of the Cannock Chase scheme.

The first of the 1881 monthly meetings of the Mines Draining Commissioners was held in Wolverhampton on Wednesday. The Tipton Committee recommended that if the Willingsworth Colliery Company, of Wednesbury, would work their own pumping-engines and reduce the water to the same level as that at which it stood when they stopped working, the commissioners should allow 125*l.* per year to be deducted from the rates in the future. It was reported that these terms had been accepted by the company, and the recommendation was approved. A motion was carried by which every occupier of a mine within the drainage area is required to make a return of the number of acres of mine occupied by him, and of the number of tons of mineral raised by him during the past half-year. Upon this return will be levied a general or surface drainage rate, to be spent in carrying on the surface works.

TRADE OF THE TYNE AND WEAR.

Jan. 5.—The shipments of coals and coke from these rivers have been below an average during the past week, mainly owing to the Christmas holidays. The shipments of these materials at Tyne Dock, the largest shipping place on the Tyne, during 1879 have been very large, over 4,500,000 tons. The exportation of coals, coke, pig-iron, and plate-iron, chemicals, and general merchandise, all show an increase over 1879. The imports also show a large increase; iron ore shows an increase of over 60,000 tons, nearly double the amount of the previous year. The importation of Swedish pig-iron, which is used in steel-making in the Midlands, has been much larger than usual. A new import has been introduced this year—wood pulp for paper-makers. In the Esparto grass trade a large import, and is still increasing.

On the whole, the year opens with a good prospect for the coal and iron trades here; the collieries, consequent on the increased make of iron, and the improved demand for house and most other coals for shipment, appear to be gradually approaching to full employment over the whole district. In Durham, indeed, this position has already been reached, and a little improvement has also been got in prices, and consequent increase in the rate of wages. Should the demand continue to increase prices must improve, as the output in Durham is not expected to be greatly increased during the present year. In Northumberland full employment would certainly increase the output to some extent. The only dispute at present between the coalmasters and miners is the demand of the deputies in Durham for higher wages, and this is to be referred to arbitration shortly. The establishment of a sliding scale for wages in the coal and iron trades may be expected to prevent the occurrence of strikes, whatever fluctuations may occur in the demand for the produce of those works, and in the demand for men employed in the various operations connected with them.

The North-Eastern Railway Company have, indeed, been revising their rates for mineral traffic, but not, as we expected, for the benefit of the iron and coal masters, but the reverse. On January 1 there is an advance of from 3½ to 4 per cent. on the rates of carriage of minerals on this system, and this change is causing great dissatisfaction amongst those connected with those trades. The iron and coal trades have passed through a most trying crises, and only at present may be said to be emerging from the difficulties they have been passing through, and any advance on this carriage is extremely ill-timed and impolitic on the part of the directors of this great railway system There has certainly been a little advance in raw materials, coal, and also upon pig-iron, but there has been no advance to warrant the slightest advance in railway rates. In the coal and pig-iron trades, indeed, the masters are now at present prices hardly paying their way with, in favourable cases, a slight margin of profit, and they are certainly not in a position to pay any advance in railway rates. The North-Eastern Railway Company have a monopoly in this district, but this ought not to be taken advantage of by such a powerful and excellent company. They are doing a large and lucrative business, and earning good profits, and they ought certainly to show some consideration to the leading industries of the district they serve. There is no doubt that the business of the North-Eastern Railway is well conducted in every respect. The efficiency of the service, both as to speed and safety, is not, we believe, surpassed by any railway system in this country, but at the same time they have always been accused of acting in a grasping and illiberal manner to their most important customers. This feeling has at certain periods been very strong, and the question of introducing competing lines of railway into the district has often been agitated. This subject has been keenly discussed at Middlesborough during the past week, and a committee of the Corporation and also the Chamber of Commerce there have taken action in the matter. Communications have been sent from those bodies to the North-Eastern directors asking for a meeting, when they propose to lay before them facts and figures in support of their views. The question is also much discussed at Sunderland, and at Newcastle, which is really the metropolis of the North, it is not (it is supposed for certain reasons) so much agitated publicly, but there is a strong feeling on the subject.

The pig-iron trade is firmer this week, and there has been a slight advance in prices also. No. 3 is now quoted at 40s. per ton for next month. The stock of pig-iron, it is generally understood, will be 40,000 to 60,000 tons in excess of the stock at the end of 1869, but as the make has been increased to an enormous extent—nearly three-quarters of a million—the increase in stock is of little consequence. The tone of the iron trade is certainly firmer, and 41s. is quoted for No. 3 over the three months. In Messrs. Connall's stores 126,000 tons are now held. Shipments are going steadily forward. In the manufactured branches there is no change, but prices are well maintained. The extent to which the iron trade has recovered from the great depression of late years is shown by the fact that in Cleveland and Durham at least 3,000,000*l.* has been received in 1880 more than was received in the previous year for crude and finished iron.

The great advance which has been made in iron shipbuilding at all the north-eastern ports, but especially on the Tyne and Wear, is a very important feature. It is evident that sailing ships are gradually being discarded, and large iron steamers substituted in their place, and the builders on these rivers are securing a good share of this important business. As most of the engines and boilers required are constructed on those rivers also, the progress made by the marine engineers, both on the Tyne and at Sunderland, has been enormous during the past year. On the Tyne the largest works of this kind is of course Palmer's works at Jarrow, but there are many similar works on this river where marine engines of the finest description are constructed. The works of Messrs. R. and W. Hawthorn, in Newcastle, are famous for this kind of work, as well as for locomotives and all other kinds of land enginés. At the celebrated works of Messrs. Stephenson, in Newcastle, there is much activity, as 30 large locomotives are on hand for the Midland Railway Company; four of those engines are completed. Some marine work is also done there. An order has just been received for twin engines and screws for a fine vessel now building at Leslies, Hebburn, for the Italian Government. At Sunderland the largest marine works are the North-Eastern Marine Engine Works, where a large amount of first-class work has been turned out during the past year, and as we have already noticed, the company are about to establish similar works on the Tyne. At Mr. George Clark's works on the north bank of the Wear a large number of marine engines have also been constructed during the past year. All the engine works on those rivers that that are engaged in the building of marine and boilers, &c., are well provided with orders that will keep them fully engaged for some months to come. There is still a dearth of orders for winding and hauling engines for collieries and other land engines.

At Middlesborough, on Tuesday last, there was a good attendance on 'Change, and there was a strong and confident feeling; inquiries were numerous, and prices considerably higher. Makers are inclined to hold for higher rates, and pig metal is going into warrant stores in considerable quantities. The quotation for No. 3 was about 42s. per ton; warrants, 43s. to 43s. 6d. net. The shipments of iron for the year make up over a million tons from the north-eastern ports. This is about 145,000 tons more than the previous year. Scotland has been the leading customer, about 285,000 tons, and to the United States 90,000 tons. Considerable discussion has taken place on the question of the high rates charged by the North-Eastern Railway Company on iron making materials, and attempts will be made to get them reduced. The demand for ship plates continues very strong, and also for all finished iron.

REPORT FROM DERBYSHIRE AND YORKSHIRE

Jan. 6.—Complications appear to be the order of the day, for whilst the colliery owners say they are unable to realise profits the men demand an advance of wages, and at some of the collieries notices have been given to leave unless an increase of wages from 10 to 15 per cent. is conceded. The employers say they cannot alter existing arrangements, for they have kept the workmen going not for their own benefit but for their employees. The demand for an advance of 15 per cent. asked by the men is being pushed forward, and during the week at a number of the pits the men have given notice to quit their employment if the advance is not given.

The principal collieries, including Clay Cross, Eckington, and Blacknell, have been doing a very good business with London, and prices have been fully maintained to consumers. Unfortunately, however, colliery owners have not been much benefited by the advance in the price of coal by London merchants, although prices are 3s. per ton higher than they were in the summer months. A movement, however, is now on foot to bring the coal producer and consumer more closely together, which will be a great advantage to both. This matter has been forcibly brought before the public by Mr. Mulvancly, an eminent mining engineer of Westphalia, who thinks that the profit on coal should not go to the merchant or dealer, but be participated in by the coalowner. Were this done, he says, colliery owners would be in a position to sink more shafts or bore holes, but as they now are without profits they cannot make any outlay, for if they did it would come out of the capital.

The pig-iron trade of North Derbyshire has undergone no change of late, so far as production is concerned, but prices during last week had become much firmer. At Dronfield the steelworks are busy, having some good orders in rails. In small malleable castings, for which the place has long been noted, there has been a steady output.

Trade in Sheffield has once more got into its old groove, and the men are well employed. The mills engaged on ship and boiler plates, sheets, bars, hoops, and telegraphic wire are doing well. In railway material, including Bessemer rails, tyres, and axles, a good deal has been done, America still being one of the best customers. In crusible steel there has been no improvement of late, but the prospects in the present year are more encouraging. The leading cutlery houses are fairly employed, especially on the finer qualities of table and pocket knives. Skate makers, so busy in December, have now become very quiet, and shopkeepers are so well stocked that they are not likely to require more for some time.

In South Yorkshire the great question now is the advance in wages, for which the men, in most instances, have given notice to quit their employment unless their terms are complied with. The trade with the Metropolis is still maintained at late prices, and several of the principal collieries have sent a large tonnage there. The demand for steam coal is much the same as a week or two ago, and the same may be said with regard to coke and nuts.

FOREIGN MINING AND METALLURGY.

Some improvement is noticed in the Belgian iron trade, as a whole. The demand has become more active, and new transactions are spoken of on several sides. No advance has taken place in prices, but at the same time they exhibit more firmness. Pig has been firmer upon the Belgian markets. Some thousands of tons of English casting pig have been dealt in at 2*l.* 8s. to 2*l.* 8s. 10d. per ton, delivered at Antwerp, while refining pig remains at its ordinary price, varying from 2*l.* to 2*l.* 4s. per ton. Iron is maintained a little better, at 4*l.* 16s. per ton.—that is to say, the real price is approaching more closely to the nominal price. The difference of 8s. per ton per number brings the price of other qualities to 5*l.* 4s. and 5*l.* 12s. per ton, but these rates are to a great extent nominal. The demand for plates is stronger, and 6*l.* 16s. per ton can now be obtained from clients. Orders for 1000 new trucks have been let by the Northern of France Railway Company to Belgian industrials—250 to the Bruine-le-Comte Belgian Workshops Company, and 750 to the Belgian Railway Plant Company. The last-named company, in consequence of the abundance of work, is about to re-open one of the establishments of which it had discontinued the use. Contracts for a considerable number of coal trucks and other plant have been let for the Belgian State Railways. The general tone of the Austrian iron trade is good: several furnaces have their production engaged until the close of the first half of 1881.

The weather continues adverse to Belgian coalowners, and if there were not a good demand on metallurgical account it is evident that the collieries would have a good deal to complain of, as the demand for domestic qualities of coal cannot be maintained in presence of the exceptionally mild weather which characterises the winter of 1880-1. Communications by water have been almost completely suspended, but this fact, if not unexpected, was at least provided for in its consequences, and the market suffers comparatively little from it. Prices have experienced no decline at present. It is hoped that the floods which have prevailed will soon subside, and that navigation will be resumed in the ordinary manner; this would give a stimulus of coarse to business. Deliveries of coal from the German basins are continued on an active scale, although the demand, especially for domestic qualities, has been restricted, as compared with some preceding weeks. The extraction continues large, and a heavy quarter's business is anticipated in the Dortmund district. The weather has prevented the conclusion of some transactions, but still contracts have been currently entered into with deliveries extending into the second half of 1881. Quotations have been maintained with firmness, and a rise has even taken place in some districts, among others in Upper Silesia.

A tolerably geod current of orders has been noticed in the French Department of the Haute-Marne, and prices have only been discussed in the case of orders the execution of which is required after June 30. A meeting of forgemasters of the Nord has adopted unanimously an advance of 4s. per ton; this carries the price of first-class merchants' iron to 7*l.* per ton at the works. In the Meurthe-et-Moselle a quotation of 2*l.* 11s. 3d. per ton is maintained for refining pig. At Nancy refining pig has remaiued without change at 2*l.* 12s. per ton at the furnaces. In the Ardennes the price of rolled iron, which was 7*l.* per ton at the commencement of December, has been carried to 7*l.* 4s. per ton, and some works have even introduced a quotation of 7*l.* 8s. per ton. There appears, however, to be rather a tendency against exaggerated quotations, a good current of orders being regarded as of more importance. It is stated that the orders given out, and now in course of execution in France, comprise 1,500,000 tons of steel and iron

Meetings of Public Companies.

ARUBA ISLAND GOLD MINING COMPANY.

The seventh ordinary general meeting of shareholders was held at the offices of the company, Gresham House, Old Broad-street, on Friday, Dec. 31,

Mr. J. VALENTINE SMEDLEY, the Chairman, presiding.

Mr. ARCHIBALD MACKENZIE (the secretary) read the report, and the balance-sheet was presented to the meeting.

The report was as follows:—

The board beg to submit the audited accounts of the company to Dec. 31, 1879. The board have little to report to the shareholders, and would not at this season have put them to the inconvenience of coming here were it not that one general meeting must be held in every year, and a few formal matters disposed of at it. The Agency Company are still working the mines in Aruba under their agreements with this company, and have expended in working and development sums considerably in excess of what they bound themselves to expend, and it is hoped that this company will one day participate in the benefit of that extra expenditure. The Agency Company have, however, made no profit yet for division between themselves and this company. The creditors of the company, with very few and inconsiderable exceptions, have agreed to the conversion of their debts into 25 per cent. fully paid up preference shares, and the board hope to be shortly in a position to proceed to the allotment and issue of those shares. The Phosphate Company, in whose success this company is interested, will, it is expected, be in a position to commence the exportation of phosphate for sale in Europe in the early part of the ensuing year. An auditor for this year must be appointed, and his remuneration fixed. One director retires from office, and being eligible offers himself for re-election.

The CHAIRMAN said—Gentlemen, you have heard the report of the directors read by the secretary, and the balance-sheet is before you. It is as great a disappointment to your directors, as it must be to yourselves, that it is not in the power of the board to announce to you that the gold mining operations conducted by the Aruba Agency Company (which, as you know, is working our gold mines at Aruba under an arrangement to pay to this company a percentage of the net profits) have at present resulted in a profit. Difficulties—some of them of an unforseen nature—as I had occasion to state when I last had the honour of addressing you, have seriously interfered with and impeded the gold mining operations of the Agency Company One of the chief of these difficulties, as the report has told you, has been the desertion of most of the native miners at certain periods, when by means of their labours satisfactory results could have been attained. This cause of trouble, you will have been gratified to learn, has now been remedied by the Agency Company having, with the official consent of the Government of Curacao, already imported miners from the neighbouring island of Bonaire. As is too often the experience with mining companies abroad, the necessary local technical knowledge, so indispensable to the profitable working of gold mines in particular, has, I regret to say, been wanting. As one of the two directors of your company holding seats (as *ex officio* directors) upon the board of the Agency Company to protect the interests of your company, I think I am in a position to say that arrangements are expected shortly to be made by the board of the Agency Company, in some form or other, for supplying this necessary element in mining, the want of which, as I have said before, renders successful mining impossible. Of the main fact of importance in a gold mining enterprise—the existence of pay gold quartz in practically inexhaustible quantities—there is, I am in a position to state, as you must all now be fully aware yourselves, no question or doubt whatever in the case of our Aruba Mines, and under proper technical, watchful, local management there can be no difficulty in extracting the gold at a profit instead of at a loss, and sending it home to be divided between this, the parent company, and the Agency Company, in the shape of dividends. I may tell you that while by the first process by stamping and amalgamation some 14 dwts. of gold per ton has, on an average, been extracted out of the few thousands of tons of ore crushed since the Agency Company recommenced to work the mines in the spring of 1878 (some 5000 tons), which yield by the way is, I believe, about the same as the average of the results obtained by the great St. John del Rey Gold Mining Company, there are at this moment some 4000 to 5000 tons of tailings round and about the stamp mill, estimated to contain something between ½ and 1 oz. of gold to the ton, principally in the shape of pyrites, or in round figures an asset worth, if and when extracted, from 10,000*l.* to 15,000*l.* The board of the Agency Company within the last few months have received a ton or so of partially concentrated tailings and blanket washings from the Aruba Mines, containing by assays by Messrs. Jonnson and Matthey from 6 to 17 ozs. of gold per ton of concentrated tailings. Some of this stuff the board have, through Messrs. Henry Bath and Son, sold to Messrs. Vivian and Sons, of Swansea, at the rate of 77s. per ounce of the gold as per assay. The actual parcel sold was found by trial assays by Messrs. Vivian and Messrs. Bath and Son to contain but about 15 ozs. of gold per ton, but the price realised for this parcel by the board of the Agency Company was at the rate of 60*l* per ton of concentrated tailings. Since this result the Agency Company board for some months have been seeking to find by private means, and latterly by advertisement in the *Mining Journal*, to find contractors who would at their own cost and risk proceed to Arnba and concentrate these tailings (the contractors to find their own machinery, labour, &c.), ship home the results, and accept payment in a percentage of the gross sales in England, but without success. Arising, however, out of a satisfactory trial with some of the tailings and blanket washings received from Aruba by a system of concentrating machinery in England in the presence of one of your directors, and in view of no contractor having come forward to undertake such a contract as the Agency board desired to obtain, a formal proposal, I am able to tell you, has been now made to the board of the Agency Company on behalf of a company now in course of formation, having for its object, among others, the undertaking of contracts for the concentration and treatment of tailings in any part of the world, upon the principle of accepting payment only in results—that is to say, contracting at contractor's cost and risk to find all necessary plant, machinery, labour, and expenses of every kind, and to concentrate at the mines all the existing, current, and future tailings or blanket washings, the concentrated tailings to be shipped to England, for sale by Messrs. Henry Bath and Sons, and the gross receipts for the sale of the stuff to be divided in certain proportions between the mining company and the contractor. The contracting company further offers to advance a certain amount in cash to the Agency Company on account of the proportion of the gross receipts receivable by the Agency under such a contract. This is, in other words, an opportunity offered to convert what is at present an unavailable asset of some thousands of pounds, into hard cash, and by means of the capital and at the risk of another company. So much for the gold prospects of our company. As you have heard in the report, there seems to be every prospect of the exportation of phosphate from Aruba for sale in the European markets during the ensuing year. The Chairman concluded by moving that the report and balance-sheet be adopted.

Mr. CAMERON seconded the resolution, which was pnt to the meeting and carried unanimously.

On the motion of Mr. CAMERON, seconded by Mr. HILL, Mr. Jas. Ford was re-appointed anditor, with a remuneration of 50 guineas. It was explained that the remuneration was paid in the bonds of the company.

On the motion of Mr. EMERSON DAWSON, seconded by Mr. CAMERON, Mr. J. Widdecombe was re-elected a director.

The meeting was then made special for the purpose of altering and modifying certain agreements between this company and the Aruba Agency Company.

The CHAIRMAN said—Gentlemen, you have heard the notice convening the special meeting read by the secretary, and the objects of the meeting stated therein. The object of the resolution is to put into effect what is asked for of this company by the Aruba Agency Company. As stated in the notice, it is one which the shareholders (board included) are asked to deal with. If I may be allowed to express my individual opinion, more as a shareholder than as Chairman of the company, it is frankly that considering the large amount of capital which one or two or more of the shareholders of the Agency Company have been finding to develope and make a success of our gold mines in Aruba, it would seem but simple gratitude, as well as common sense, to accede to the request of the Agency Company, always, however, with the proviso that thts company has some kind of assurance and proof from this time that the necessary technical local management at Aruba will not be wanting. The resolution which I have to move is—"That the agreements between this company and the Aruba Agency Company (Limited), dated respectively Dec. 4, 1877, and June 14, 1879, be altered and modified by providing that the net profits of the Agency Company, in which, by

the agreement of June 14, this company is to participate, shall in future be taken to mean that portion of the Agency Company's profits which shall remain after the cumulative preference dividends with the preference shares, not exceeding 25,000*l.*, to be issued by the Agency Company, shall have been deducted from such net profits and paid."

Mr. EMERSON DAWSON seconded the resolution, which was passed unanimously. A cordial vote of thanks to the Chairman closed the proceedings.

SOUTH CONDURROW MINE.

The ordinary general meeting of shareholders was held at the offices of the company, Austinfriars, on Wednesday,

Mr. H. J. MARSHALL in the chair.

Mr. J. HICKEY (the secretary) read the notice convening the meeting and the minutes of the previous meeting, which were confirmed. He then read the financial statement for the five months, charging costs to Nov. 20, from which it appeared that the total expenditure had amounted to 8091*l.* 14s. 10d., and the total receipts to 10,674*l.* 19s. The tin sold—198 tons 1 qr.—realised 10,610*l.* 11s. 9d., or an average price of 53*l.* 11s. 8½d. The profit was 2583*l.* 4s. 2d., and the balance in favour of the mine 513*l.* The accounts were audited by Messrs. Deloitte, Dever, Griffiths, and Co.

The CHAIRMAN moved the adoption of the report and accounts.——Mr. CLARKE seconded the motion, which was adopted unanimously.

The CHAIRMAN said: Gentlemen, as you know at this meeting it is usually our custom to look back at the proceedings of the year and see what we have done, and what we are likely to do for the future. During the year we have sold 551 tons of tin, which has realised 29,391*l.* 7s. 5d., and 29 tons of copper, realising 140*l.*, produced at the cost or 19,348*l.*, to which must be added dues 1191*l.*, leaving a net profit on the year's operations of 10,181*l.* 6s. 2d. It might have been a little better—we wish that it had—but the stuff has been hard, and not quite so rich as we have had it. There has been, as you will have anticipated, a considerable amount of exploratory work going on. Some 300 to 400 fathoms of levels, winzes, and shafts have been driven and sunk in the year, and during the six years we have had charge of the mine over two miles of exploratory levels, shafts, and winzes have been driven and sunk. This, of course, has all cost money, and we have been spending a good deal of money, as you know, upon ground that as yet has made no returns. In the western ground we have sunk a trial shaft, and we have driven some 40 fms. of levels at the 70, and 10 or 15 fms. at the 30. You may say that in round numbers we have spent 1300*l.* or 1400*l.* on ground from which we have had no return yet. We have discovered a lode there which we believe to be the Wheal Grenville lode, and which we have sunk on from the killas and 7 fms. into the granite. The stuff has very much improved, and we have now a very good lode in the bottom worth 10*l.* per fathom. The lode is of a productive kind, soft and easy to work and pass through the stamps. It has been gradually improving as we have gone down, and the last sample taken gave about ¾ of a cwt. of tin to the ton, and we expect shortly to reap a profit from that expenditure. Capt. Rich, as you know, is very careful in prophecying, but I think I may say that probably within six months we shall be drawing stuff from that ground. We have exercised a certain amount of caution in our expenditure, so far as we have been loath to spend your money until we knew whether any good was to come of the work, but now we shall spend more freely, as we think we are justified in doing now that the end is near at hand. We shall have to put an engine down shortly for winding purposes, and, of course, you must look forward to paying for that engine. But it will not be a very costly affair, as we only want an engine to do the drawing. At our last meeting a good deal of time was taken up in answering questions as to the different purposes to which the money had been allotted that we see has been spent in these accounts, and, therefore, for the year I have got Mr. Hickey to draw up an analysis of the expenditure, which I hope will render all questions and answers on these points unnecessary. It will be printed with the accounts, and forwarded to each shareholder. I will read the figures. The first item is the fees of the committee and the travelling expenses. I believe I am the only member of the committee who draws travelling expenses, as I live some distance from London. Mr. Clarke is good enough to attend without any travelling expenses, as he has business in town. I am sorry to say that our colleague, Mr. Weston, with whom we have served so long and so pleasantly, has been obliged, in consequence of failing health, to tender his resignation as a director. We do not feel that a third committeeman is necessary; but if you prefer that a name should be added we have a name we could submit for your acceptance. The committee's fees and travelling expenses for the year have amounted to 49*l.* 9s.; secretary's salary—which includes rent of office and accommodation here—109*l.* 1s.; agency—which includes the salaries of the agents and purser—504*l.* 7s.; tutwork or exploratory work, 3638*l.* 16s.; tribute, 3500*l.*; dressing cost, 2124*l.*; for labour at the mine—that is, "stems," hauling, carriage,, and that kind of thing—3222*l.*; sundry small payments at the mine, 250*l.*; rents, dues, rates, and taxes, 1456*l.*; merchants' and petty bills, 5729*l.*; and sundry payments in London for printing, stationery, stamps, &c., and the auditor's fee, amounting together to 62*l.* 14s. I think that statement will post any gentleman up in the manner in which the money has been spent at the mine, and also the little spent in London. People said six years ago that we had a nice set of stamps and floors, but "what they want is the stuff." Well, we have been going on for six years. We have crushed stuff and sold it, and paid you dividends, and we are still in no want of stuff. All we want is that it shall be rich, and go through the stamps a little more easily. We could keep more stamps supplied, and if we could drive the stamps more quickly we could supply them with plenty of food. I see from "Lean's Reporter" that our stamps are doing 11·8 per minute, taking the month through—that is, one stroke a minute faster than every other mine recorded in this list, except Dolcoath, and there we are 9-10ths per minute quicker. That shows that our stamps had been admirably managed, for there can be no higher test of the manner in which the stamps had been attended to than the record to which I have just referred. With regard to the amount of profit we have to deal with, the profit strictly earned is 2500*l.* odd. We have, as you know, a floating balance that we asked you to allow us to accumulate for the purpose of working the mine without anticipating or discounting our bills, and to enable us to pay ready money for all we order. It was not to be a fixed sum, but varying from time to time; sometimes to be added to and sometimes taken from. We brought into the account 2263*l.*, and we have now 5131*l.* available for division. The difference is 2867*l.* 6s. 1d. A 10s. dividend requires 3061*l.* 10s., and that will reduce our balance by 194*l.* 6s. 11d., and leave us with 2069*l.* 10s. to carry forward. We think we are justified in proposing that you should now declare that dividend, and I propose that a dividend of 10s. per share shall be paid forthwith.

Mr. HERITAGE seconded the proposition.

Mr. COOPER asked what had been the average price per ton realised for the tin during the whole year.——The CHAIRMAN said it was 53*l.* 6s. 10d.

Mr. COOPER said that compared with 40*l.* 7s. per ton in the previous year, and yet they were asked to receive a lower dividend, though a very satisfactory rise had taken place in the average price received for the tin.

The CHAIRMAN explained that the reason for the falling off in the profit was that the stuff was harder and poorer, and that the ends had been more costly to drive.

Capt. RICH added that the stuff was of a coarser kind, but the engine could not have gone at a higher speed than it had. During the year about 21,000 tons of stuff had passed through the stamps. There was no lack of stuff, but it was not yet quite so rich in quality as that raised in the previous year.

The dividend recommended was then declared payable forthwith.

Capt. RICH, in reply to a question, said in the western ground they had cut a good soft lode, and they had 200 or 300 fms. of unexplored ground in this part of the property. He considered that the prospects of the mine had considerably improved during the past year.

On the motion of Mr. MACKAY, seconded by Mr. SHERWOOD, the committee, Messrs. Marshall and Clarke, were re-elected.

Some discussion ensued on a proposition by Mr. M. G. BROWN that the company should subscribe 10 guineas to the fund recently started by Mr. Peter Watson to oppose the renewal of the dynamite patent. Ultimately the proposition was negatived by the number of shares held by the dissentients though those in favour were in a majority of five to three.

The meeting then closed with a vote of thanks to the Chairman.

LADY ANN SILVER-LEAD MINING COMPANY.

The statutory general meeting was held at Oldham on Thursday.

Mr. HENRY SCHOFIELD in the chair.

Mr. W. H. BARLOW (the secretary) read the notice convening the meeting, and before the regular business commenced Mr. Eckersley proposed "That the best thanks of the meeting be and are hereby given to Mr. Schofield, who has hitherto acted as Chairman of the company, and the board of provisional directors." In moving this resolution Mr. Eckersley remarked that it gave him great pleasure in doing so inasmuch as he knew the great interest the Chairman had taken in bringing the company to its present favourable position. He was, moreover, the Chairman of an Association of Limited Liability Companies representing a capital of about 5,000,000*l.*

The motion was seconded by Mr. J. P. BARDSLEY and carried.

Mr. SCHOFIELD briefly returned thanks assuring the meeting of his determination to do all he could to further the interests of the company, and make it if possible in every way worthy the attention of investors desirous of entering a *bona fide* lead mining property.

Messrs. Schofield, Bardsley, Stenson, Eckersley, and Crosse were re-elected directors; W. H. Barlow was reappointed secretary; the Bank of Oldham (Limited) bankers; and Capt. W. Francis, M. and C.E., agent.

The CHAIRMAN, in commenting upon the company and property, said he had every reason to believe that this company was in possession of a really genuine property. He had himself visited it on two occasions when arrangements were required to be made to develope certain portions of it, and had been in the workings, examined the shaft and levels, and described their capacity and indications as to lead ore, calamine, and vein compounds, and said there was every element of success in all which could be seen in coming to the conclusion that this company would ultimately prove a valuable undertaking. Capt. William Francis, the agent, had furnished a correct plan of Francis shaft, Westminster lode, and the level now driving on that lode, which would be of value to the directors in discussing the affairs of the company as required at the mines. The efforts of the directors and officers of the company would be specially directed to the obtaining of capital to work the property vigourously and economically, and he had reason to know that the Lady Ann Mines were looked upon as having all the necessary elements of ultimate success. He then read the subjoined agent's report:—

Jan. 1.—I visited the mine yesterday, being the end of the working month. I am pleased to report that the dam lately put in the shaft has proved a complete success, and no water at present issues from this point, though sorely tried by the late heavy rains, and that the other small fissures from which the water percolates do not seem to be affected by the stoppage in the dam, though I entertained grave doubts on this subject. You will, therefore, see that the small sum laid out for this purpose will become a very valuable consideration to the future working at this place, and enable us, I trust, to go on uninterruptedly through all seasons; the water from the other outlets proving only a little hindrance occasionally; I have set 1 fathom to drive. I have also the pleasure to report that the vein at the forebreast (Westminster lode) presents a more favourable appearance than it has at any place opened upon it, containing more lead ore and calamine, as well as all the most congenial compounds generally associated with metalliferous deposits, and I confidently look forward to a success in this our first undertaking in this property. I would, however, urge strongly the advisability of your commencing operations from the western whim-shaft, so as to discover the run of ore known to exist, and worked very rich as far as our western boundary; and also that the eastern shaft, on the Pant-y-gwlanod lode, should be opened and put in order, so as to drive westward on this lode through the property for upwards of 435 yards, when I have no doubt rich and valuable discoveries would be laid open, and worked over 100 yards in depth upon all the four main lodes before expensive steam-power would be required.

WILLIAM FRANCIS.

Several questions by shareholders were asked and satisfactorily answered, and the meeting separated with the usual formalities.

NEW CATHEDRAL COPPER AND TIN MINING COMPANY.

The ordinary general meeting of shareholders was held at the offices of the company, Drapers' Gardens, Throgmorton-street, on Thursday, Mr. JAMES LABY in the chair.

Mr. EEWARD ASHMEAD (the secretary) read the notice convening the meeting. The accounts were taken as read. Mr. Ashmead then read the following report from the agents:—

Jan. 4.—Since your last general meeting the mine has been drained from the 42 to the 52, or the then bottom levels, cleared up stuff, shaft divided and planked down to that point, with all the necessary work for developing the mine below. The engine-shaft has been sunk 12 fms. through a lode varying in size from 2½ to 3½ ft. wide, composed of quartz, fluor spar, mundic, and copper ore, and now presents a more promising appearance for the production of copper than at any time since our starting to sink. The shaft is also divided and planked down to the 62, with footway, &c., complete. The 62 is driven east of shaft 2 fms.; lode 3½ ft. wide, producing yellow and grey copper ore. The 62 is driven west about 2 fms.; lode 3 ft. wide, producing both oxide and carbonate of copper. The 52 is driven east of shaft 34 fms.; lode 4 ft. wide, and of a soft pliable nature. In the last 3 fms. driving we have found intermixed some good tinstuff, with a little copper ore; this we shall further prove for tin in a few fathoms driving. The 52 is driven west of shaft 20 fms.; lode 2 ft. wide, but at present disordered by a small crossing. The lode in the 42, driving west of shaft, is 2 ft. wide, producing a little copper, but not sufficient to value. The lode in the stope in the bottom of the 30, west of shaft, is 2½ ft. wide, producing about 2 tons of copper ore to the fathom. Ground opened since the last meeting in sinking shafts, winzes, driving levels, &c., 150 fms. The plant on the mine is in good working order, and equal to putting the mine considerably deeper. The masons have completed the building of the balance-bob stand, and the carpenter has most of the work ready for lifting in beam, and putting same to work. By way of conclusion we beg to say that after passing through the elvan we have got into a beautiful stratum of mineral-bearing ground, and that there is every indication of a permanent mine if properly developed.—STEPHEN DAVEY, STEPHEN DAVEY, Jun.

Mr. PETRIE noticed that the company was in debt to the directors to the extent of 369*l.*, for advances to the company.

The CHAIRMAN said that was so, and later on the financial position of the company would have to be discussed.

Captain DAVEY said, in passing down from the 40 fm. level to within 4 or 5 fms. of the present bottom they had had some patches of elvan, which in the district in which the mine was situated, were generally the precursors of good deposits of ore. They had passed through them now, and had got into beautiful mineral-bearing ground about the bottom of the shaft and levels. The indications were very good indeed, although they had no riches to boast of at present. They were not, however, so deep as the point at which riches were made in the adjoining mine. In West Damsel, which during the time it was worked was an exceedingly rich mine, the riches made about 10 or 20 fms. below their present bottom at New Cathedral; and he looked upon their lode as being quite equal to any lode which had been developed in the district, and he believed that if the mine were properly developed their results would be as profitable as those of any mine in the neighbourhood had been. In this opinion he was borne out most decidedly by the independent authorities who had visited the mine. Their expenses had not been heavy—about 180*l.* per month; but as they had laid open between 100 and 200 fms. of ground during the year, the money had not been thrown away. He believed that with a little patience they would arrive at the goal at which they were aiming.

Mr. PETRIE asked how long the present company had been at work?——The CHAIRMAN replied that it had been working about nine months; the mine having been unwatered in March last.

Mr. WALTON enquired whether the adjoining mines to which reference had been made had discovered rich ground at the present depth of New Cathedral?——Capt. DAVEY replied that they had not. So far they had had some nice little bunches of copper, and the lode at the back of the 30 was at present worth 2 tons of ore to the fathom.

Mr. WALTON believed the lodes were parallel?——Capt. DAVEY said they were, with the same cross-courses.

Mr. WADDINGTON had no doubt that the elvan course disordered the lode for a certain time, but without the elvan a mine was not worth much. The appearance of the lode could not be better than it was. The gossan would probably have produced mineral but for the inclination and dip of the elvan course having disordered the lode; but now they had got through that, and were now in settled ground, and he believed they would have a very good lode in a short time. He had been down West Damsel Mine, which had been a very good property, and he was aware that there had been several millions of pounds worth of copper ore sold from within a very small radius of their mine. The only thing for them to do was to get the shaft down as quickly as possible, and to extend the levels east of the cross-course.

The CHAIRMAN then proposed that the accounts and the agents' report should be allowed and passed, and that they should be printed and circulated amongst the shareholders.——Mr. PETRIE seconded the proposition, which was carried unanimously.

Mr. HERITAGE proposed the re-election of the directors, Messrs. James Laby, James Walton, and W. H. Lethbridge, remarking that the large stake which the directors held in the company was a substantial guarantee that they would do the best they could for the general body of the shareholders.——Mr. PENNINGTON seconded the proposition, which was carried.

Mr. WALTON returned thanks, and Mr. LETHBRIDGE remarked that though the directors had taken their fees they had immediately invested them in shares in the company.

On the motion of Mr. WALTON, seconded by Mr. TELFER, Mr. J. J. Stansfield was re-elected auditor of the company for the ensuing year at the same remuneration as before.

The CHAIRMAN then said that when the last company which worked this property came into liquidation it was thought advisable that the mine should be repurchased if possible, and he was commissioned to go down to Cornwall and try and buy the concern as cheaply as he could from the authorities of the Stannaries Court. When he got there he found there were several gentlemen on the spot ready to purchase the property, knowing it to be a very valuable one, but knowing that he represented the old shareholders they said they would not oppose him. He, therefore, bid for it and purchased it for about 1000*l.*; but this amount he took out in shares in the new company, and thus the property did not cost the company anything in cash. (Hear, hear.) Several other shareholders came forward, and eventually 8173 shares were taken up in the new company, leaving 3827 out of the 12,000 shares unallotted. If all the old shareholders had come forward as was hoped and taken up their *pro rata* number of shares, they would have been able to carry on the mine some little time longer without appealing to the shareholders, but for two months past the directors had had to put their hands into their pockets to provide the costs, and they now recommended that the company should be turned into a company on the Cost-book Principle, believing that the shares would then be readily taken up, and that the mine would soon be in a flourishing condition. He had some little experience of cost-book mining, and he knew that it was a very advantageous principle upon which to work a mine. He thought it would be a thing for this company to thus convert itself.

Mr. PENNINGTON asked whether the local bankers would probably join them if the company were converted into a cost-book concern?——The CHAIRMAN thought they would.

The SECRETARY said letters had been received from Messrs Harvey and Co., and from the representative of the Messrs. Vivian, stating that if the mine was fairly started on the Cost-book Principle they would take an interest in it.

Captain DAVEY added that the representative of Mr. Michael Henry Williams had informed him that Mr. Williams would take shares in the mine, and several other local gentlemen had said the same.

Mr. WALTON, while acknowledging that this was very encouraging information, thought they should rely on themselves rather than on outsiders, and said that the holders of 6884 shares out of the 8173 shares allotted had expressed themselves in favour of the proposed conversion.

Mr. LETHBRIDGE remarked that the company had come to the end of its resources, but if the balance of the shares were taken up it would not be necessary to change the constitution of the company.

Mr. WADDINGTON said the great advantage of the cost-book system was that it gave far greater facility than the limited liability system for the transfer of shares. The only Cornish mine, so far as he was aware, which was now being worked by a limited liability company was Mellanear; and he never knew an unsuccessful mine made into a successful one by means of this latter system. He knew this mine well, and he thought they could not do better than convert the company as recommended. Twenty tons of ore per month would give them a very good profit. The directors were themselves too largely interested in the company to allow it to drift into debt.

Mr. PENNINGTON: What would probably be the cost of sustaining the mine for several months to come?——Mr. WADDINGTON: About 180*l.* a month.

Mr. PENNINGTON: Must that be continued?——Mr. WADDINGTON: We think so.

Capt. DAVEY, in reply to Mr. PENNINGTON, said the ground to the westward of the bottom was producing a little ore. They might reach the mineral in 5 fms. or in 20 fms.—the distance mentioned in his report. They had a beautiful channel of ground, which he believed would make ore both east and west.

Mr. HERITAGE, in the course of some further discussion, in which the opinions expressed were favourable to the proposed conversion, remarked that out of about 365 mines working in Devon and Cornwall before the depression set in their's was one of about 60 or 70 which had survived, and he thought that this fact proved it to be an intrinsically valuable property. He moved—"It is the opinion of this meeting that the directors should take the necessary steps to reconstitute the company on the Cost-book Principle."

Mr. PETRIE, in seconding the motion, said he thought it was the one thing needful for them to do. He had been down to the mine several times, and he had gradually increased his holding.

Mr. WALTON remarked that Mr. Petrie only took 100 shares at first, but after going down and inspecting the mine he had bought 200 more at 1*l.*, and other members of his family had increased their holdings at the same rate.

The CHAIRMAN having mentioned that the expense of the conversion would be very trifling, the motion was carried unanmously, and it was decided that the directors should call a meeting to carry the resolution into effect.

Mr. TELFER urged upon the directors the necessity of obtaining the best machinery possible for treating the ore, and some conversation followed with regard to this point.

The CHAIRMAN said the matter would be carefully considered, and Capt. Davey said he should only be too happy to see any really successful machinery at work.

On the motion of Mr. PENNINGTON, seconded by Mr. WADDINGTON, a vote of thanks was passed to the Chairman and directors, and the meeting then closed.

[For remainder of Meetings, see to-day's Journal.]

THE COAL TRADE.

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coals into and from the port and district of London, by sea, railway, and canal, during December, 1880:—

IMPORTS.

By Sea.	Ships.	Tons.
Newcastle	280	268,450
Sunderland	107	91,021
Seaham	23	13,795
Hartlepool	61	24,353
Middlesborough	4	1,801
Scotch	11	7,797
Welsh	12	8,886
Yorkshire	22	3,539
King's Lynn	1	77
Small coal	12	5,855
Cinders	2	133
Colonial	4	221
Total	539	425,928
Imports—Dec., 1879	514	367,778

By Railway and Canal.	Tons	cwt.
Lond. & North-Western.	143,170	17
Great Northern	87,423	0
Great Western	96,773	5
Midland	192,658	0
Great Eastern	79,045	15
South-Western	5,200	8
South-Eastern	1,561	17
Grand Junction Canal	503	0
Total	606,341	2
Imports—Dec., 1879	592,736	16

Comparative Statement, 1879 *and* 1880.

By Sea.	Ships.	Tons.
Jan. 1 to Dec. 31, 1880	5225	3,714,708
Jan. 1 to Dec. 31, 1879	5256	3,508,526
Increase—1880	—	206,182
Decrease—1880	31	—

By Railway and Canal.	Tons	c.
Jan. 1 to Dec. 31, 1879	6,550,285	10
Jan. 1 to Dec. 31, 1880	6,200,780	13
Decrease—1880	349,504	17

IMPORTS DURING THE YEAR 1880.

By Sea.	Ships.	Tons.
Newcastle	2156	2,005,064
Sunderland	1280	948,151
Seaham	421	225,914
Hartlepool	705	286,294
Middlesborough	42	17,809
Scotch	113	63,397
Welsh	155	94,638
Yorkshire	188	22,632
King's Lynn	2	200
Duff	1	230
Small Coal	88	41,956
Cinders	43	6,070
Colonial	30	2,350
Foreign	1	21
Total	8225	5,714,708
Imports—1879	5256	3,508,826

By Railway and Canal.	Tons.	cwt.
Lond. & N.-Western	1,436,338	6
Great Northern	949,740	0
Great Western	1,055,609	6
Midland	1,999,668	0
Great Eastern	669,283	3
South-Western	59,369	4
London, Chatham, and Dover	6,007	0
London, Tilbury, and Southend	94	8
South-Eastern	20,195	16
Grand Junction Canal	4,470	15
Total	6,200,780	13
Imports—1879	6,550,285	10

EXPORTS DURING DECEMBER, 1880.

Railway-borne coal passing "in transitu" through district	Tons	110,206
Sea-borne coal exported to British Possessions, or to foreign parts, or to the coast	66,213	
Ditto sent beyond limits by railway	18,623	
Ditto by canal and inland navigation	1,815 =	86,651
Railway-borne coal exported to British Possessions, or to foreign parts, or the coast	36,320	
Ditto, by canal and inland navigation	159 =	36,489
Sea-borne coal brought into port and exported in same ships		1,305
Total quantity of coal conveyed beyond limits of coal duty district during December, 1880		234,851
Ditto, during December, 1879		235,934

Comparative Statement, 1879 *and* 1880

Total distribution of coal from Jan. 1 to Dec. 31, 1880	2,447,344
Total distribution of coal from Jan. 1 to Dec. 31, 1879	2,364,927
Increase in the present year	82,417

General Statement, 1879 *and* 1880.

Decrease in coals imported by railway during 1880	349,504	
Less increase in coals imported by sea	206,182 =	143,322
Add increase in exports		82,417
Total decrease in trade within the London district—1880		225,739

THE COPPER TRADE.

Messrs. HENRY R. MERTON and Co. (Leadenhall-street, Jan. 1) issue the following Statistics of Copper:—

Stocks in Europe:	
Chili ores and regulus, Liverpool and Swansea (equal to fine)..Tons	1,166
Chili bars in Liverpool	20,959
Chili bars in Swansea	10,801
Chili ingots in Liverpool and Swansea	16
Foreign copper (chiefly Australian) in London	6,879
Foreign copper ,, ,, Landing	255
Chili bars and ingots and barilla in Havre	6,037
Other copper in Havre	793
Stocks of copper contained in other foreign ore and Spanish Precipitate (fine)	1,474
Afloat, and chartered from Chili to Europe (advised by mail):	
Ore and regulus (equal to fine)	1,006
Bars and ingots	6,386
By cable, ores and regulus fine)	100
Bars and ingots	1,800
Afloat from Australia (advised by mail):	
Fine copper	561
By cable: Fine copper	2,377
Total	60,610

Price of bars, 61*l.* 15s.; Wallaroo, 72*l.*; English tough, 65*l.* 16s.

Messrs. RICHARDSON and Co. (Jan. 1) write:—The Swansea imports of foreign copper produce during the quarter ending Dec. 31 were—ore, 18,423 tons; regulus, 3833 tons: copper, 2534 tons; precipitate, 1346 tons. The exports were 1196 tons 11 cwts. In private sales the following are reported:—4 cargoes New Quebrada ore at 12s. per unit; 260 tons Kurilla ore, at 12s. 3d.; 150 tons North American regulus at 12s. 4½d.; 1040 tons Chili regulus at 12s. 4½d.; and 310 tons at 12s. 6d.; 630 tons Chili ore at 12s. 3d., and 600 tons Cape at 12s. 4d. The stocks of foreign copper produce now remaining at Swansea unsold this day are—Ore: Newfoundland, 6387 tons; Quebrada, 445 tons; Norwegian, 200 tons; Spanish, 250 tons; Dutch, 110 tons; Portuguese, 510 tons; British, 546 tons=8448 tons; regulus, 2594 tons; copper, 10,801 tons. These totals represent about 12,200 tons of fine copper.

Messrs. HARRINGTON, HORAN, and Co. (Liverpool, Dec. 31) write—Chili copper charters for the second half of this month are advised 2000 tons, consisting of 1000 tons bars and ingots, and 500 tons furnace material for England, and 500 tons bars for Continent. Total charters for this year have been 40,650 tons, against 50,900 tons last year, and 47,050 tons in 1878. After our last issue Chili bars declined to 60*l.* 10s., since which the market has assumed a firmer tone, and up to 61*l.* 15s. has been paid for good ordinary brands on the spot, at which rate it closes steady. The transactions in furnace material during the past fortnight comprise 1040 tons Chili regulus, ex Inverness, at Swansea, at 12s. 4½d.; 630 tons ex Pacific, at Swansea, at 12s. 3d.; 310 tons regulus, at Swansea, at 12s. 6d.; 370 tons regulus, ex Bridegroom, in Liverpool, at 12s. 6d.; 280 tons Peruvian ore at 12s. 3d., a cargo Cape ore at 12s. 4d., 60 tons English precipitate at 12s. 6d., 700 tons Rio Tinto precipitate, to arrive, at 12s. 6d.; 55 tons Rio Tinto (leaf), to arrive at Swansea, at 12s. 6d.; and 796 tons Spanish precipitate at 12s. to 12s. 3d. per unit.

PIG-IRON.—Messrs. Connal and Co., Glasgow (Dec. 31) write:—Statistics show that the average make per furnace has only been 190 tons, against 203 tons last year; the decrease being largely accounted for by the deranged state of the furnaces for a time after having been so long out of blast. The total now blowing is 124, of which eight are producing hematite, and the average for the year is 106. Production shows an increase of 117,000 tons, being 1,049,000 tons, against 932,000 tons. There has been used in foundries, malleable and steel works, 384,000 tons, and the exports, foreign, coastwise, and by rail, amount to 671,000 tons, being an increase in the former of 82,000 tons, and in the latter of 107,000 tons. Stocks show a decrease of 6000 tons, being 739,000 tons, against 745,000 tons last year. The quantity of English iron imported has been 335,000 tons against 315,000 tons, being an increase of 20,000 tons. The highest price paid was 78s. 3d. on Jan. 12, and the lowest accepted was 44s. 5d. on June 2, whilst the average was 54s. 6d. The make of Cleveland is estimated at 1,990,000 tons, and of hematite, &c., at 515,000 tons, giving a total of 2,505,000 tons, or an increase of about 723,000 tons. The stocks of hematite are not given, but the total quantity of Cleveland may be taken as 830,000 tons, as against 283,000 tons last year, being an increase of 47,000 tons; and when the largely increased production is considered its shows a wonderful elasticity in the trade. The year closes with 118 furnates in blast, against 96. The price of No. 3, f.o.b., Tees, has fluctuated between 65s. and 35s. 6d., and closes at 40s. Malleable and steel works have been actively employed, and the district has benefited largely by the prosperity of the shipbuilding trade.

METALS IN AMERICA.—Messrs. THOMAS J. POPE and BROS., New York (Dec. 22), write: Unquestionably the stocks of many metals were and are very heavy as compared with the year 1876, 1877, and 1878. But in those years it should be borne in mind that neither consumer, the trade, nor speculation carried any amount of stocks. But all are now necessitated to do so, because of the great activity of business. It is anticipated that the movement in business, if prices be maintained on a moderate basis, will commence early in January, and greatly and continually increase with the advancing season. But that the severe lessons taught by the experience of the year 1880 will prevent that reckless

speculation and those expanded ideas of prices which characterised so disasterously the business of that year. Both Scotch and English pig-iron are dull and nominal. The antimony market, and prices for Cookson's are generally 15 cents to 15½ cents; Hallett's a shade lower. The spelter market is dull. Prices nominal. Lead: Prices are being actively pressed. Store lots we quote at 4½ cents to 4⅝ cents. The demand for tin has been steady and heavy in the United States. Prices of late have yielded, and to-day are merely nominal, but with favourable foreign advices it is likely to recover. We quote 20 cents to 20⅝ cents as the price to-day. Stocks in the United States about 2400 tons; consumption per month about 1000 tons, which will be largely increased in 1881.

IRON AND HARDWARE.—Messrs. BROOKER, DORE, and Co. (Jan. 1), write: The year 1880 will be remembered by all who are interested in the iron and hardware trades as a most remarkable one, and its history affords experience of an entirely unique character. When another revival sets in, and it is possible that we are now on the eve of it, prices may advance as rapidly as in the fall of 1879, but should they do so the reaction will no doubt follow as speedily as in the spring of last year. We seem to have entered upon an era of increased capacity of production, which prevents the long duration of high prices. On the other hand it is likely that upward movements may be often initiated, and that they will attain their maximum much sooner than heretofore, owing to the immediate impetus that is given to prices on a rising market by telegraphic communication. The year closes with a good steady trade at prices which are certainly at their lowest. We look for a considerable improvement in demand before the spring is upon us, and should not be surprised to see quotations higher all round very soon.

INSTITUTION OF CIVIL ENGINEERS.—This society, which was established for the promotion of mechanical science, has just entered upon its 64th year. According to a list corrected to Jan. 2 it now numbers 3839 of all classes, distributed thus:—members, 1231; associate members, 1335; associates, 569; honorary members, 18, and students, 686. Two years ago the by-laws were so amended as to allow of the separation of the professional from the non-professional associates, the former being designated associate members, and the latter retaining the simple title of associate. Few institutions have done a larger amount of useful work, so that the great success is well deserved.

NACIMIENTO COPPER QUARRYING AND SMELTING COMPANY.—An interesting series of reports upon this company's property by Mr. F. M. F. Cazin, M. and C.E., of Bernalillo; Prof. J. S. Newberry, of Columbia College, New York; Mr. Aug. Raht, M.E.; Mr. R. F. Pixley, M.E., of San Francisco; and Mr. J. G. Whitney, has been made. Mr. Cazin says there is no doubt, whatever, that from the quarry the ore may be taken to the works, carrying in the average no less than about 7 per cent. of copper, and that a considerable part may be brought directly from the quarries to the furnaces with about 40 per cent. of copper. Prof. Newberry's report is an extract from that made by him in 1859 as member of the Macomb Expedition. Mr. Raht says that a number of assays made of the chalcocites as they occur show their average to be 44 per cent. of copper. Mr. Pixley reports that the ore estimated to be in sight makes the property worth $10,000,000 net. The deposits will be more fully referred to when further arrangements for their developments have been made.

BIRMINGHAM INDUSTRIAL MUSEUM.—It was announced some time since in the *Mining Journal* that Messrs. Tangye Brothers, the well-known engineers, had munificently offered 10,000*l.* towards a fund for the erection of a fine-art gallery and industrial museum at Birmingham, on condition that the Town Council would provide a building, and that 5000*l.* should be raised by subscription. It was on Wednesday announced that 6500*l.* had been raised, and that the gallery would be installed at the Council House.

EMPLOYERS' LIABILITY ACT.—That an Act of so extensive application as this should have called forth the free expression of opinion by a large number of persons is not surprising, and it is gratifying to find that all have approached the subject in a temperate and friendly spirit. The address delivered by Mr. W. H. Duignan, of Walsall, before the South Staffordshire Mill and Forge Managers Association, has now been reprinted in pamphlet form for 4d. (Walsall: W. Henry Robinson), and will, doubtless, be very generally read; a copy of the Act is annexed. The "Annotated and Arranged Edition of the Act," by Mr. C. A. H. Black, B.A., of Exeter College, Oxford, and of the Inner Temple, Barrister-at-Law (Chesterfield: Wilfred Edmunds. London: Bemrose), is a sound, popular treatise, in which unnecessary legal technicalities are avoided, although there are many references to decided cases. The price is 1s. 6d. A good "Summary of the Law of the Liability of Employers" (in a volume but little larger than those mentioned), is given by Messrs. W. Howland Roberts and G. H. Wallace, both barristers-at-law (London: Reeves and Turner, Chancery-lane), who dedicate their work, by permission, to Lord Selborne, a sufficient evidence that the book is meritorious. The work is systematically arranged in six chapters, treating respectively of the duty of the employer, the doctrine of common employment, the persons to whom the Employers' Liability Act, 1880, applies, compensation and procedure, and defences available to the employer; whilst there are appendices giving the Act itself, form of notice of injury, and County Court rules, 1880. A large amount of care and thought has, without doubt, been bestowed upon the work, and the result amply repays it.

INSURANCE FUND FOR THE SOUTH STAFFORDSHIRE IRON TRADE.—The operatives will meet in a fortnight to consider a scheme for the establishment of a fund for the purpose of effecting insurances for South Staffordshire ironworkers and their families in cases of death or disablement from accidents, in order to avoid litigation under the Employers' Liability Act. The fund will be supported by the joint contributions of employers and operatives, and will be managed by a committee consisting of equal numbers of both sides, the chairman and vice-chairman of the Wages Board being *ex-officio* members of the committee. If the scheme be approved an office will be provided for the committee, and it is proposed to have the head-quarters in Wolverhampton, as that town is considered by the promoters of the movement to be the most convenient for that purpose.

THE ROYAL ALMANAC OF ENGLAND.—Although only a cheap almanac the amount of information contained is enormous, and is, moreover, of a character likely to be required for reference. It is published by Messrs. Clayton and Co., of the Temple Printing Works, Bouverie-street, and contains, in addition to the ordinary calendar matter, gardening, astronomical and general notes, lists of the Royal household, principal officers of State, principal Government and public officers, orders of knighthood, lists of peers, members of Parliament, retrospective notes, and various other interesting particulars.

TANNING.—Several enquiries having been made as to the precise nature of Mr. Nicholson's new tanning process, already referred to in the *Mining Journal*, it may be stated that the provisional protection (No. 4123) having only been obtained in October it is impracticable to give details, but it is said that a company is in course of formation, and that the promoters have full confidence. Mr. Nicholson writes—"With a full knowledge of the vast experience of the bulk of English tanners, and of the excellent qualities of leather produced by them under the time-honoured system of tanning in use, I have proved, and am, therefore, confident that equal results can be praduced in much less time with much less labour, and with a great abatement of drudgery. I mean that I can produce quantity and quality of shoe, harness, dressing, and sole leather without the use of acrid, destructive, or violent chemical agencies (the tendency of which is to destroy the organic structure of the pelt) in one-sixth the time now occupied for ordinary tanning, whilst the product shall be equal in flexibility, firmness, colour, insolubility, and all the other characteristics of good and perfect leather." A company is, it appears, in course of formation, with a capital of 5000*l.*, in shares of 2*l.* each, and the provisional directors have paid 300*l.* for the option to purchase all the patent rights for 2500*l.* It is reported that at a preliminary meeting samples of hide were exhibited to the company tanned by the Nicholson process, which evidenced a very important step in advance of the present art or science of tanning, but it is held essential that this should be tested in the most severe way, and upon a sufficiently large scale, to prove its commercial value, both in point of time and the quantity and quality of the yield in leather. To carry this out in a manner to ensure public confidence, the intervention of an eminent London firm will be engaged to purchase on behalf of the company 12 ordinary market hides, to weigh and mark them indisputable for future identification, to dispatch the hides so marked to the inventor (Mr. Nicholson), to receive them back when tanned, and then to reweigh and submit the leather to competent judges in the trade for examination and report. The result will be published in due course.

Registration of New Companies.

The following joint stock companies have been duly registered:—

COFFIN AND COMPANY (Limited).—Capital 50,000*l.*, in shares of 25*l.* To acquire all the rights, property, interest, and claims of Col. E. D. Hunt under certain grants, leases, agreements, &c., and to the business, goodwill, and effects of Coffin and Co., for the purpose of carrying on the business of a colliery proprietor, general merchant, shipbroker, and manager, insurance and general commission agent, &c. To win, work, raise, get, manufacture, and sell coal, cannel slack, culm, ironstone, and other minerals and mineral substances. The subscribers (who take one share each) are—L. Wood, Cardiff, colliery agent; W. Perch, Cardiff, shipowner; T. R. Thompson, Cardiff, shipowner; E. C. Bregeon, Cardiff, merchant; L. Gueret, Cardiff, merchant; W. Gallaway, Cardiff, M.E.; E. D. Hunt, Cardiff, colliery proprietor. Mr. L. Wood is to be the sole director, secretary, and shipping agent to the company.

WHICHAM MINING COMPANY (Limited). — Capital 24,000*l.*, in shares of 500*l.* To adopt and carry into effect an agreement, and to acquire certain mining rights and minerals situate in Cumberland, together with all the shafts, machinery, mining plant, railway, tramways, and effects belonging to the property. To use, work, develope, and extend the mines, and for that purpose to search for and sell iron and other ores, metals, minerals, and substances, and generally to carry on the business of a mining company in all branches. The subscribers are—T. Massicks, Millom, ironmaster, 8: W. B. Walker, Silicrofts, esquire, 8; J. Straker, Millom, esquire, 8; G. H. Horsfall, Liverpool, esquire, 7; J. Bourne, Liverpool, Bart., 7; G. E. Holt, Fern Hill, gentleman, 6; H. Horsfall, Liverpool, merchant, 4. The first directors are—Messrs. Massicks, Walker, Straker, Bourne, Holt, G. H. Horsfall, and H. Horsfall.

THE DANISH FREEHOLD LAND RECLAMATION COMPANY (Limited).—Capital 150,000*l.*, in shares of 10*l.* To carry on the operations of a land company in connection with that country. The subscribers (who take one share each) are—F. Gane, Holloway; G. F. Bentley, 19, Doddington-grove; W. H. Fry, 17, Steedman-street; P. Trenter, Hackney; C. H. A. Voigt, 9, Union-court; A. Stein, 17, Great Winchester-street; J. Stephenson, 26, Suffolk-street.

The SONBACK AND CATER ALAN MINING COMPANY (Limited).—Capital 200,000*l.*, in shares of 1*l.* To purchase or otherwise acquire, work, and develope certain mines of lead, silver, gold, iron, copper ore, and other minerals, situated in the Kara Kissar, Asia Minor, and elsewhere. To crush, smelt, reduce, and amalgamate the ore and render marketable all the produce, and generally to carry on the business of mining in all branches. The subscribers (who take one share each) are—L. Stanislas, 34, Millman-street, gentleman; E. Reid, Peckham Rye, journalist; J. F. Firby, 1, Westminster Chambers, C.E.; W. H. Beaumont, New Cross, gentleman; E. Gilbert, 187, Upper Thames-street, printer; J. Burbridge, 62, Moorgate-street, advertising agent; E. D. Chattaway, 84, Fleet-street, engineer. The subscribers to appoint the first directors, whose number must not exceed 12 or be less than two.

THE TREVINCE CHEMICAL COMPANY (Limited).—Capital 5000*l.*, in shares of 5*l.* The acquisition and working of chemical works situate in the parish of Gwennap, Cornwall. The subscribers (who take one share each) are—J. Turner, Gwennap; A. Hindley, Farnworth; J. Blight, Gwennap; C. Pengilly, Gwennap; E. J. H. Pengilly, Gwennap; A. E. Pengilly, Gwennap; M. Wasley, Gwennap.

THE WHITE LEES SPINNING COMPANY (Limited). — Capital 5000*l.*, in shares of 20*l.* To purchase and continue a cotton spinning and yarn business. The subscribers are — W. H. Heap, Littleborough, 10; S. L. Chadwick, Rochdale, 5; A. Mill, Rochdale, 10; T. Fletcher, Rochdale, 10; J. Fletcher, Rochdale, 10; C. Hardman, Manchester, 10; D. Shaw, Clayton, 10.

THE NEEDLEROCK ESTATE AND GOLD MINING COMPANY (Limited).—Capital 125,000*l.*, in shares of 1*l.* To purchase or otherwise acquire lands, estates, and properties in India, and in particular a parcel of land containing 250 acres, situate in the Nilgiri district of the Madras Presidency, and to improve and cultivate the same. To work and develope gold mines, minerals, and mining rights in India or elsewhere, and to crush, wash, smelt, and amalgamate the ore of the foregoing or any other properties that may come into the possession of the company. The subscribers (who take one share each) are—A. F. Solomon, Leatherhead, clerk; J. Werner, 152, Wool Exchange, merchant; J. Palmer, Southwark, accountant; D. Shrewsbury, 19, Change-alley, wine merchant; W. Buttler, Brixton, solicitor; W. P. Willins, Romford, solicitor; T. W. Martin, South Norwood, secretary. A director's qualification is 250 shares.

THE BOROUGH OF BIRMINGHAM LOAN SOCIETY (Limited).—Capital 20,000*l.*, in shares of 10*l.* To carry on a financial business in all branches. The subscribers are—W. Warlaw, Handsworth, 60; E. Padmore, Moseley, 140; E. Bowen, Birmingham, 20; T. L. Bath, Oldbury, 8; W. H. Lewis, Birmingham, 40; T. J. Padmore, Moseley, 130; J. B. Buncher, Birmingham, 60.

THE PLYMOUTH DAIRY COMPANY (Limited).—Capital 5000*l.*, in shares of 1*l.* To carry on a dairy business. The subscribers are—J. Welch, Herne Hill, 100; W. H. Powell, Mecklenberg-square, 10; E. Gaseler, 90, Lower Thames-street, 10; E. S. Flint, Forest Hill, 5; J. Hall, Plymouth, 150: R. Willis, Horrabridge, 100; J. de Vice, Plymouth, 10.

THE COMMERCIAL AND COUNTIES ADVANCE BANK (Limited).—Capital 20,000*l.*, in shares of 10*l.* To carry on a banking business in all branches. The subscribers (who take 10 shares each) are—S. Goldberg, Gloster; S. Freedman, Cardiff; B. Freedman, Bristol; L. Freedman, Newport; P. Freedman, Bristol; W. Moore, Southampton; J. Freedman, Bristol.

THE BELTIM LAND AND IRRIGATION COMPANY (Limited).—Capital 240,000*l.*, in shares of 20*l.* To carry on the business of a land company in connection with Egypt. The subscribers (who take one share each) are—The Duke of Sutherland, Stafford House; E. Huth, Tokenhouse Yard; C. C. Davenport, Lower Norwood; J. H. B. Browne, 88, Clarendon-street; Sir A. B. Kemball, 79, Queen's Gate; W. O. Dodgson, 26, Royal Exchange; F. Walters, 12, Tokenhouse Yard.

THE LILLESHALL COMPANY (Limited).—Capital 600,000*l.*, in shares of 300*l.* To take over a coal and iron master's business, carried on heretofore by the Lilleshall Company, and to continue the business. The subscribers are—Earl Granville, 18, Carlton House-terrace, 85; Duke of Sutherland, Costessy Hall, 108; E. F. L. Gower, M.P., 14, South Audley-street, 75; T. D. Gilbert, 16, Old Burlington-street, esquire, 22; W. Blount, Gerrard's Cross, esquire, 43; J. E. Horton, Shifnal, esquire, 22; C. Lucena, Staines, esquire, 22. Earl Granville is the sole director, holding one-third of the paid up capital.

THE TEWKESBURY MANUFACTURING COMPANY (Limited).—Capital 10,000*l.*, in shares of 5*l.* To acquire and carry on a business for the manufacture of linen collars, fronts, wristbands, &c. The subscribers (who take one share each) are—G. W. Binns, 62, Chancery-lane; A. H. Lloyd, 8, Warwick-court; F. Duke, Charlton; R. A. James, 38, Finsbury Pavement; E. W. Crane, 98, Albion-road; W. Brainbridge, Stamford Hill; H. Tyler, Highbury.

ENAMELLED METAL ROOFING TILES.—A fine and durable enamel-like coating on metal, which has the advantage of elasticity, and thus removes the liability to fracture, has been invented by Mr. T. LONGMAN SWITZER, of Newport, Isle of Wight, and would appear to be particularly applicable to the manufacture of tiles for roofing. The surface is first well cleaned from rust or dirt or any other extraneous substance. This may be done by scouring with sand. It is then in a perfectly dry state coated with what is commonly called enamel dial varnish, or an admixture of other varnishes, sometimes with and sometimes without the enamel dial varnish, according to the nature of the work; it is then baked in a stove: one or more coats of ground colours having been put on it, it is baked after each coat. All colours cannot be worked in the same way, as some will require more care in the baking. Colours such as blue, green of different shades, and purple colours, such as lake, will require less heat or they will fly, but red, black, chromes, and white will stand a much higher heat. White lead should not be used, but zinc white, and no other white unless to mix with other colours. A thin coat of varnish or an admixture of varnishes having then been put on, the plate is baked again, and when quite hard placed on a flat surface and smoothed with fine pumice stone and water; it is now ready to receive any further coats of colour required, or it may have another course of varnishing and baking first.

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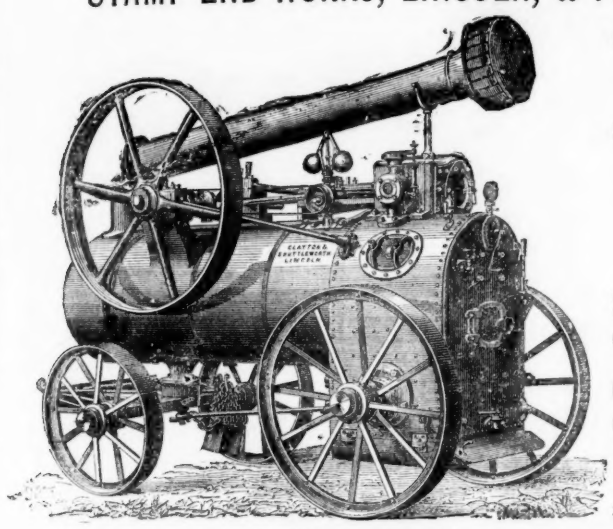

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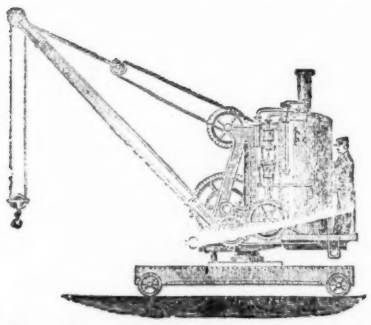

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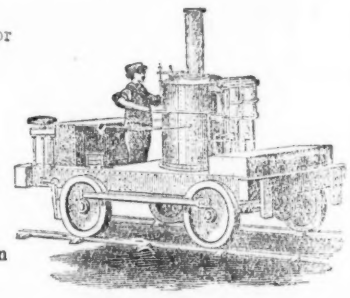

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